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East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

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CZECHOSLOVAKIA

STRATEGY OF CEMA INTEGRATION DISCUSSED

Prague NOVA MYSL in Czech No 6, 1983 pp 59-69

[Article by Dr Josef Tauchman, Economic Institute, Czechoslovak Academy of Sciences, Prague: "Mutual Structural Strategy of CEMA Countries"]

[Text] Care devoted to development and deepening of international socialist economic integration that became an inseparable part of the life of the CEMA community countries forms an increasingly important attribute of the economic policy of Marxist-Leninist communist and workers parties of socialist countries. In the framework of a widely based and multidimensional system of methods and forms of cooperation in all spheres of social life--which they are constantly developing--these parties consistently deal with the most important problems of integration and the long-range outlooks of its further deepening, particularly since adoption of the Comprehensive Program. In this activity, in which they are guided by commonly shared Marxist-Leninist principles, they figure as a unifying leading political force that motivates and channels integration processes.

Congresses of communist and workers parties of European socialist countries that took place in 1981 promulgated a decisive course toward intensification of economic development and adopted measures for implementation of this strategic objective in the years 1981-1985, eventually till 1990. Not left unnoticed was even the fact that intensification of economic development in individual countries must be inevitably accompanied by intensification of international socialist division of labor and integration and the relevant measures in economic, scientific and technological cooperation, by its improved management. In the report on Principal Guidelines of Economic and Social Development in CSSR During 1981-1985 at the 16th CPCZ Congress it was stated: "At the same time it appears highly necessary to devise--as part of plans for the long-term outlook--the key directions of our participation in the development of socialist economic integration with a view to urgent changes in the structure of Czechoslovak economy."¹ In connection with intensification and long-term strategy of cooperation it was pointed out at the 26th CPSU Congress that: "Life makes it imperative that coordination of plans be accompanied by coordination of the entire economic policy."² This thesis was adopted as binding by the 36th CEMA Plenum in Budapest in June 1982.³ At this plenum the chairman of the USSR Council of Ministers, N. Tikhonov, stated: "The need for a closer economic unification of the countries of our community is naturally not constituted

merely by external causes. It is constituted primarily by the necessity to accelerate transition of the national economy to intensive development. To that end there is a need for a thorough reorganization of the structure of social production on a viable scientific and technological basis with a view to the mutual complementation of our countries' economies. There is a need for jointly working out strategic decisions, selecting effective directions for specialization of production and efficiently linking scientific and technological potentials. There is also need for continuing to improve the economic mechanism of cooperation.⁴ To improve collective dealing with strategic problems of economic development of the CEMA community, at the 26th CPSU Congress it was proposed to hold consultations on economic problems at the highest level.⁵ This initiative was supported by other communist and workers parties of CEMA countries. At the commemorative meeting celebrating the 60th anniversary of the foundation of the USSR, the secretary general of CPSU Central Committee, Y.V. Andropov stated: "The countries of our community have many important tasks ahead of them. Among them belongs defense of our socialist accomplishments and values against the pressure of imperialism, common struggle for strengthening peace and relaxation of tensions; they include an ongoing effort for improving political cooperation and, finally, also providing a new impetus toward economic integration."⁶

It follows from the above that communist and workers parties of European socialist countries regard as the key long-term problem the implementation of another important step toward development of international socialist division of labor and integration, transition to a joint structural strategy. Put as briefly as possible, the term joint structural strategy is to be interpreted as formulation and implementation of joint strategic objectives for the development of international socialist division of labor and the attendant structures of the production complexes of socialist countries. Among joint strategic objectives are included those that represent chronologically and spatially extraordinarily demanding changes in international and their attendant national proportions of social production, such as stipulation of long-term objectives for economic development of the community, determination of the rate of economic growth, selection of the most viable long-term directions for scientific and technological development as well as concentration and specialization of production, determination of the relevant basic directions of changes in the structure of production, long-term orientation in the area of the volume and structure of consumption, a search for the corresponding steps to be taken in improving the mechanisms of planned management in the international sphere and in the national spheres of the socialist community. Under the conditions of the worldwide economic system of socialism, when there prevails economic independence of socialist state entities as the decisive subjects of international division of labor, the joint structural strategy is implemented through coordination of the structures of the national economy, coordination of structural changes of the production complexes of individual socialist states implemented eventually by common effort on the basis of agreement.

The conditions for a joint structural strategy are created in the community of socialist states in the process of the community's economic growth and their clarification is based on an analysis of the basic antithesis of the international socialist economic relation, i.e., antithesis in the very essence of

this relation. Marxist economic theory discovered that the condition and an inseparable factor of positive solution and final resolution of this basic antithesis is common economic growth including within it as its attributes the gradual equalization of economic level and the gradual establishment of closer relations of the mutually complementary economies of socialist countries. As all of these 3 processes are inseparable and because the starting point for this overall movement in the material sphere is ultimately nothing else but the national magnitudes of economic levels which, on the average, are small, yet differing by orders of magnitude, the solution and final resolution of the basic antithesis has as its prerequisite a maximum rate of continuous and common economic growth. From the viewpoint of transition to communism--ergo, the overall progress of mankind--it involves objectively given processes in which is reflected the basic economic law of socialism together with all the other specific economic laws of socialism in their international application, i.e., legitimate. Here we can speak of the legitimacy of the maximum rate of continuous common economic growth which includes legitimacy of gradual equalization of economic level and legitimacy of gradual rapprochement of the economies of socialist countries; or we can speak of the legitimacy of each process separately and formulate their mutual linkages. The entire process culminates in the political sphere of rapprochement of socialist nations. In the economic sphere this process as a whole forms an objectively given legitimate content of the process of international socialist economic integration. From this viewpoint we can regard socialist economic integration as the specific legitimacy of the worldwide system of socialism. To this then must correspond the subjective aspect, i.e., socialist economic integration as a specific economic policy, its systemic prerequisites, relevant mechanisms, etc.

At a certain point in this process of common economic growth, including equalization of economic levels and rapprochement of the economies of socialist countries, there comes into the foreground the requirement for introduction and development of a joint structural strategy, when strategic changes in the structure of the production complexes of individual socialist countries are determined and eventually implemented through joint effort. This point can be characterized in general as a relatively high degree of economic development (i.e., a relatively high general magnitude of economic level) of the community, while there exist relatively small, eventually negligible differences in national magnitudes of economic level, when the structures of production complexes of socialist countries are developed to the same or almost the same degree and when it becomes possible to achieve a relatively high degree of mutual structural interlinkage of national economies. We can also say that the urgent need for a joint structural strategy is the greater and clear cut, the higher is the general magnitude of economic levels in the community of socialist states, the smaller the differences between national magnitudes of economic level, the smaller are the differences in the degree of development of the structures of the national production complexes and the higher is the degree of their specialization. If the subject fails to accommodate this objective need by a relevant economic policy, the ascendancy of that point becomes manifested in practice by a reduction in the economic effectiveness of international socialist division of labor, a reduction in the effectiveness of production in individual national complexes, a reduced rate of growth.

The achieved stage of development in the European part of the CEMA community is marked by characteristics which indicate that this part of the community reached a point where joint structural strategy becomes the order of the day, at least in the sense of the requisite basic component of economic policy. The general (average) magnitude of economic level in the European part of the community increased since the foundation of CEMA by 7 or 8-fold and reaches in the indicator of gross domestic product per capita approximately \$2,300 (as of 1958),⁸ the difference between the average and the highest national magnitude of economic level amounts to a maximum of one-fifth, the structures of production complexes are developed to an almost identical stage of sophistication and, moreover, are marked by increasing numbers of parallel productions, by considerable extensity and a relatively low scientific and technological level. The rate of growth showed a decrease since the mid-seventies. The undertaken analyses of statistic series show a decrease in effectiveness of fixed assets and a decrease in the productivity of social labor. This development is without a doubt negatively affected by deepening of the protracted economic crisis in the capitalist world, by the discriminatory policy and threat of war on the part of imperialist countries, particularly the USA. Nevertheless, communist and workers parties of socialist countries are searching for the basic causes of the increasing problems of economic development in the inner life of the socialist community with the awareness that each social system--and, thus, also socialism--carries the basic forces for its movement within itself. They are not succumbing in this effort even though they know that the CEMA community, despite a decrease in dynamism, is achieving twice the rate of growth in comparison with advanced capitalist countries. It was specifically on the basis of a thorough analysis of the internal causes that they embarked on a decisive course toward intensification of economic development, adequate improvement of the management mechanisms in national spheres and in the international sphere of the community, preparation for imparting a new impetus to socialist integration. Measures designed for stabilizing the economic equilibrium--particularly by utilization of unused and hidden resources that can be readily mobilized--which were adopted in the individual countries for the 5-year plan 1981-1985, started showing their positive effects already in the course of 1982.

Pressure on accelerating the transition from extensive to intensive type of economic growth is increasing particularly in such national economies as are those of the USSR, GDR, CSSR and Hungary. With the exception of the USSR, these economies are open to a relatively high degree. Yet their degree of specialization of their production complexes is still relatively low and in connection with transition to an intensive type of growth, with increasing paralellism of structures and a decreased rate of growth, pressures are growing for increasing the degree of effective specialization and cooperation. Appearing with increasing frequency in economic and political practice are individual acts that could be considered as initial imperfect elements of a joint structural strategy. In this context we think primarily of long-term goal-oriented programs for cooperation and building of the so-called integrational installations, whereby we leave aside coordination of plans the contribution of which in the direction of the joint structural strategy depends on its basis and contents. All of this finds naturally its reflection in the Marxist economic theory of international socialist division of labor which since its origins

in the latter half of the fifties, particularly during the period of preparation of the document "Basic Principles of International Socialist Division of Labor," adopted in 1962, reached at one level the division of a categorical system of the worldwide economic system of socialism and socialist economic integration, and at another level the division of a joint model of economic renewal for several interested socialist countries and the division of a theory of so-called international production systems.

In the European part of the CEMA community it is turning out that transition to an intensive type of economic growth in individual national economies is coming into conflict with the achieved degree of development of international socialist division of labor and integration. There appears a demand for continued deepening of international socialist division of labor characterized, in addition to international exchange in primary sectors, by a more prominent deepening of exchange in finishing sectors of producing with high and highest (top level) degrees of processing of products. It is turning out that continued development of international socialist division of labor in the indicated direction to its economic and social objectives calls for developing of a joint structural strategy as the basic component (systemic element) of the economic policy of European socialist countries. Joint structural strategy is becoming a prerequisite of continued economic growth of the community, of the process of equalization of economic levels and rapprochement of national economies, of continued development of direct relations of economic organizations, specialization and cooperation in production, etc.

Joint structural strategy, in view of the fact that it deals with objectives demanding in time and space and with widely based and long-term consequences (impacts), creates extraordinary demands on an efficient approach to the subject and on its own systemic backup, as was already mentioned, under the conditions of a worldwide system of socialism and the incomplete process of socialist economic integration when there persists economic independence of socialist territorial entities as the decisive subjects of international division of labor, the joint structural strategy is implemented by coordination, in other words it becomes manifested in goal-oriented planned coordination of the structural strategy of individual socialist countries. Under these conditions the basic systemic prerequisite of joint structural strategy is formed by planned optimization of the degree (i.e., extent and structure) of participation of the production complexes of individual socialist countries in international division of labor. In view of the fact that the production complex of a socialist country enters the international division of labor as a whole forming an organism in which all productions ultimately become mutually intertwined in a certain manner and to a certain extent, so that productions which directly participate in international division of labor are instrumental in securing the participation of many other productions, where optimization of the structure and the degree of participation includes optimization of the intertwined internal structures.⁹ Thus, when we speak of optimization of the degree of participation of national economy in international division of labor, we think at the same time also of optimization of the internal intertwined structures. Such an optimization, its introduction and thorough implementation brings along a whole series of problems.

It was already mentioned that the decisive subject of international socialist division of labor is the socialist territorial entity as a whole, i.e., this entity which acts as an independent socialist owner. As a result, the economic criterion for the optimal degree of its participation in international division of labor can be only the maximum increment to the object of its ownership that becomes reflected into a higher degree of meeting the needs of the populace, i.e., the maximum effect accruing to the country as a whole and derived from participation of its production complex in international division of labor. That corresponds to the basic economic law of socialism in its national application. However, a socialist territorial entity as a whole and as a social organism includes a variety of yet other subjects endowed by a certain degree of economic independence authorized by it, so that in relation to it they figure as derived subjects vis-a-vis the original subject. Many among them do directly participate in international division of labor wherein as importers and exporters they realize participation of the whole and, consequently, must have interest in its own participation as that of the whole that also must be commensurate to the degree of its economic independence. To these subjects correspond the relevant local (areal) criteria for effectiveness of participation derived from the societal criterion and forming in relation to the latter its partial (segmental) criteria. In addition, participation of the production complex of a socialist country in international socialist division of labor is implemented in various spheres or forms of cooperation, such as are foreign trade, specialization and cooperation in production, scientific and technological cooperation and others, which yield different results and to which again correspond the relevant local and partial criteria of effectiveness. Effects within the sphere of external economic relations enter into the economic renewal process and generate in it a series of other effects entering into the total final result stemming from participation in international division of labor. In consequence, the total final effect resulting from participation which forms a part of the overall result of the national economy represents a magnitude other than a sum of its corresponding initial inputs. It is just this total resultant effect that forms the true increment to the object of ownership of the socialist territorial entity arrived at through its participation in international division of labor. That means that optimization of the degree of participation of the production complex of a socialist country in international socialist division of labor occurs on the basis of a hierarchically arranged system of effectiveness criteria the apex of which is formed by the maximum total resultant economic effect stemming from this participation as the decisive criterion.

The basic problem of optimization in this context remains the problem of measuring the result obtained through participation in international division of labor. Pinpointed and introduced in European socialist countries was a whole series of indicators that express the various aspects of local and partial effectiveness at the level of initial input effects in the sphere of external economic relations or, as the case may be, in the sphere of production. Their elucidation is contained in a vast volume of specialized literature. These indicators are also listed in our Set of Measures for Improving the Planned Management System of National Economy after 1980 which was approved by the CPCZ Central Committee and by the CSSR Federal Government. However,

practically applicable methods for expressing the attained effects have not been worked out yet and the same applies consequently to the resultant effect from participation in international division of labor. In other words, a complete or preliminary solution has been achieved in regard to some elements of the "lower strata" of a given criterial hierarchy, while the problems applying to its "apex" which plays the decisive role in this system have not been solved as yet. At the same time, the significance of the criterial function of the total final effect stemming from participation in international division of labor comes distinctly to the fore specifically during optimization in the framework of a joint structural strategy which deeply affects the structure of national production complexes and determines their long-term development. It is obvious that solution of the indicated criterial problems is primarily in the domain of theory and that it is of an interdisciplinary nature.

Another group of problems is constituted by those connected with efficient planning of optimization of the degree of participation by the production complex of a socialist country in international division of labor. Under the term "efficiently planned optimization" we understand optimization which occurs prior to expenditure of social labor (*ex ante facto*) for implementation of the given objective (e.g., prior to expenditure of the corresponding investment), in the process of origination of the objective, in the process of plan compilation, the results of which are assessed in retrospect (*ex post facto*) in the process of implementation of the given objective of plan and serve for closer specification of data for optimization in the process of generating another objective or plan, etc. That means that we think of optimization as an organic component of a continuous generation and implementation of concepts and plans, as an attribute of a continuous conceptual and planning activity. Such a concept is in keeping with the law of planned, proportional development and other specific economic laws of socialism. In view of the fact that joint structural strategy involves chronologically and spatially demanding actions with widespread and long-term impacts, the requirement for an efficiently planned optimization assumes herein particular urgency. With planned optimization on a natural economy scale are connected problems of planning on an international scale, or in international sphere. With the present differences in national magnitudes of economic level and in the stages of development of the structures of national production complexes it can occur that the optimum degree of participation by a given complex in international socialist division of labor will not be feasible to implement, or could be implemented only temporarily, which poses particularly detrimental effects in a case of large-scale long-term objectives which require a relative stability of the structure of international division of labor and, consequently, a relatively permanent specialization of the production complexes of individual countries. Solution of the therewith connected problems presupposes (1) that optimization in the indicated sense and according to the same rule is carried out by all socialist countries in a region where the requisite objective conditions had been created for it (e.g., in the European part of the CEMA community); (2) that these countries mutually adapt the such optimized structures of their production complexes and that this adaptation occurs continuously as an attribute of coordination of strategic objectives, concepts and plans, namely coordination used for implementing joint structural strategy. Under these prerequisites, joint structural strategy becomes the basic component of coordination of economic policy in the sense of the requirement raised at the 26th CPSU Congress.

Relevant analyses indicate that some elements of optimization of external economic relations were applied in European socialist countries already in the past. However, that optimization was carried out in isolation from planning and ex post. At the present time a majority of European socialist countries are introducing methodologies oriented toward applying optimization ex ante as a part of planning. Best known are Soviet methodologies from the seventies. From the CSSR can serve as an example the recently published principles for assessing the effectiveness of agreements regarding specialization and cooperation in production. Nevertheless, these methodologies use for criterial purposes only the primary partial effects localized in the sphere of external economic relations, or in production, so that optimization in relation to social production occurs again ex post facto. As a result, mutual adaptation of the structures of national production complexes occurs primarily through international market mediation, still not forming in the strict sense an attribute of coordination implementing joint structural strategy. That reduces the degree of planning in the international sphere. For the time being the same applies also to such large-scale structural objectives as are the objectives included in long-term goal-oriented programs for cooperation and such large-scale projects as are the so-called integrational installations. It follows from the preceding that in the interest of a joint structural strategy both theory and practice is faced with the task of dealing with criterial problems in connection with dealing with problems of planned optimization in national spheres and in the international sphere.

Into the last category of problems can also be included problems of devising and developing mechanisms serving for formation and implementation of a joint structural strategy on the basis of planned optimization and mutual adaptation of national structures under conditions when joint structural strategy is implemented by coordination. From this it is obvious that in national spheres it involves optimization mechanisms and in the international sphere adaptation mechanisms. The basis is formed by national optimization mechanisms which should include the relevant information systems, modelling and actual optimization apparati, the relevant decisionmaking systems and a corresponding institutional arrangement. Of course, these optimization mechanisms are not formed by some independent, isolated mechanisms--we isolate them only ideally, for the needs of theoretical analysis--but they form components or, rather, projections of national systems of management and planning and, ultimately, also the international systems for management of socialist integration. The quality of these national mechanisms determines the quality of the adaptive mechanism which should form a component or a projection of the coordinative mechanism, starting with the relevant information base and ending with the corresponding legal and institutional system. The coordinative mechanism should include not only coordination of short-term and medium-term plans, but particularly long-term objectives with widespread structural impacts.

It can be said that development of mechanisms for a joint structural strategy already started in the European part of the CEMA community, even though, for the most part, in other contexts or for other purposes. Elements usable in national information systems were trace down in relevant analyses in the European socialist countries, forming the embryo of the relevant modelling and optimization apparati and decisionmaking systems. However, most of these elements

were not originally designed for optimization in the heretofore mentioned sense and are plagued by problems analogous to those of the mentioned elements of planned optimization: they are based on partial and local criteria of effectiveness applied primarily *ex post facto* and, for the time being, they remain isolated from national systems of planning and management. As an example can serve also the mentioned Set of Measures in which improvement of the quality of planning for the national economy calls for "providing of proportionality and effectiveness of growth of the economy on the basis of its effective participation in international division of labor, particularly in socialist economic integration,"¹⁰ but, for the time being, it lacks effective measures for optimization in the process of formulation of long-term objectives (*i.e.*, *ex ante*) to include objectives following up on long-term goal-oriented programs of cooperation. This detrimentally affects the quality of the so-far developed elements of the adaptive mechanism which we find in the mechanism of coordination, particularly in the case of long-term goal-oriented programs for cooperation. On the whole, the devising of mechanisms for a joint structural strategy in national spheres and in the international sphere of the socialist community is in its beginnings, whereby devising of national optimization mechanisms is of prime importance. Dealing with the relevant problems represents another task for theory as well as for practice, specifically in follow-up to dealing with criterial problems and problems of planned optimization.

The presented general characteristic of problems in the systemic sphere tends to indicate that application and development of a joint structural strategy at a stage adequate to objective conditions in the European part of the CEMA community is a demanding and long-term affair. While (theoretically) the necessity for adequate development of this strategy is obvious, the requisite instruments are not at hand. This looming contradiction can be positively dealt with in only one way, namely by following up on what we already know *de fact*, *i.e.*, by starting to implement this strategy by means of tools that we already have, imperfect though they may be for this particular purpose, that we keep improving them in cooperation between theory and practice and devise new tools. In other words, that we will proceed step by step from coordinating the strategy of development of individual important productions, optimized according to known criteria, to a joint strategy for development of structures of national production complexes and of international socialist division of labor (primarily in the European part of the CEMA community), optimized and mutually adapted according to the relevant developed criteria.

Embarking on a joint structural strategy as an indivisible aspect of intensification of economic development, of international socialist division of labor and the process of socialist economic integration understandably brings along many additional problems that were not mentioned in this presentation. Socialism as a social system on a worldwide scale, as a world system, has built-in within it objective forces capable of dealing with any and all problems of its economic development--and, consequently, also the problems of a joint structural strategy--and managing to overcome world capitalism in the economic sphere, the same as in other spheres of the life of society. However, these forces do not become effective automatically, but through conscious, purposeful activity of the social subject. On the capability of this subject to deal

with problems of economic development depends, to a certain extent, the degree of uninterrupted and continuous progress of inevitable economic processes based on economic laws. The guarantee of the successful solution to problems attendant to transition to a joint structural strategy, the same as other problems accompanying the economic development of the socialist community, is a common political guidance provided by fraternal communist and workers parties of socialist countries based on their unity of ideology and action, on socialist internationalism, and applied in the economic sphere, in management of the process of socialist economic integration.

FOOTNOTES

1. 16th CPCZ Congress, Prague, SVOBODA 1981, p. 86.
2. 26th CPSU Congress, Prague, SVOBODA 1982, p. 18.
3. Communique from 36th CEMA Plenum, RUDE PRAVO, 11 Jun 82, p. 6.
4. RUDE PRAVO, 9 Jun 82, p. 7 (emphasis by J. T.).
5. See 26th CPSU Congress, Prague, SVOBODA 1982, p. 18.
6. Victorious Path of the Soviet Union. RUDE PRAVO, 22 Dec 82, p. 3 (emphasis by J. T.).
7. The tendency of nations toward rapprochement was discovered by V. I. Lenin who also explained that this tendency can be fully realized only by socialism and by communism where it ultimately culminates in merging of nations.
8. The used indicator was drawn up on the basis of a non-Marxist concept and is considerably inaccurate also for other reasons, in spite of the fact that in our case the distortion caused by the inflationary development of the American dollar is limited. However, it is used in worldwide UNO statistics and, as such, facilitates at least approximative comparison with capitalism.
9. By way of illustration it can be mentioned that if the optimum degree of specialization of the production complex of a country such as the CSSR formed 10 percent (in share of specialized production in the total net national product), from that same viewpoint it would mean optimization of the almost entire structure of production.
10. HOSPODARSKE NOVINY, 1980, No 11, Supplement, p 7.

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CZECHOSLOVAKIA

CSSR TRADE BANK PROBLEMS, SOLUTIONS VIEWED

Prague HOSPODARSKE NOVINY in Czech 1 Jul 83 p 5

[Article by Dr Eng Josef Valach, candidate for doctor of science, Prague College of Economics: "Measuring Enterprise Merit; Does the Key Lie in Commercial Contracts?"]

[Text] In the leadoff article in this discussion ("We Know the Objective and Are Seeking Criteria", HOSPODARSKE NOVINY, NO 11/1983), Dr Vladimir Kyzlink asserted that the basic indicator according to which enterprise activity should be directed and on the basis of which it should be evaluated ought to be net operating profits. On the other hand, Dr Jaroslav Vejvoda ("Eliminate the Link Between the Plan and Volume," HOSPODARSKE NOVINY, No 16/1983) strongly rejects profit as the measure, advocating measurement by another, general category--production costs. What do I perceive to be a solution?

Even though I tend to lean toward measurement of enterprise merit in terms of increases in net profits, it is my opinion that neither profits nor costs, in and of themselves, can adequately express the overall merit of an economic organization. In both instances we are dealing with general valuational criteria, the fulfillment of either of which, in and of itself, does not guarantee the fulfillment of the full range of social and individual consumer requirements. On the contrary, such targets are often met in direct conflict with the satisfaction of these needs. This has been proven by analyses of supplier-consumer relations, which show that in this area well-known shortcomings have not changed even though, for instance, planned objectives for the structure of sales according to the economic designation of the product mix have basically been met.

The main reason for this state of affairs is an inadequate linking of valuational and material criteria in the determination of the merit of economic organizations.

Fulfilling Contractual Obligations

The measurement of merit, even by the most perfect of general value indicators, in and of itself still does not assure the fulfillment of consumer demands in terms of the desired product mix, delivery times, technical sophistication, delivery conditions, etc. Effectiveness is a combination of efficiency and appropriateness. The purpose of VHJ [Economic Production Unit] and enterprise activity cannot be only the fulfillment of general value indicators, but at the same time must include the satisfaction of a full range of customer requirements. The delivery-structure indicator, as a conditioning indicator, falls far short of assuring this. Nor can this be assured by concretely established enterprise product-mix targets because these cannot, for practical purposes, cover the entire product line of a given organization.

Commercial contracts are intended to specify and provide for the assurance of concrete planned objectives corresponding to consumer requirements. With the division of labor, specialization and cooperation all increasing, the importance of these contracts should grow substantially from a legal viewpoint, as well as in terms of measuring enterprise merit. In reality, however, these contracts often are purely formal, remaining basically outside of the influence of khozraschet pressure, the system of economic incentives and accountability. Neither property sanctions nor the potential responsibility for applying these sanctions can substantially alter this situation, so long as conditions of supplier dominance prevail.

The fulfillment of negotiated commercial contracts should, therefore, as soon as possible become one of the most important criteria for measuring enterprise merit, an inseparable component of the regulation of wages payable resources and of the formation of the economic incentive and bonus funds for managerial employees. It is also clearly necessary to see to it that in the drawing up of contracts the fundamental principles of cooperation among socialist organizations be respected as these have been codified in the new commercial code, so that these contracts not become an expression of supplier dominance over the consumer. This would contribute to the creation of more favorable conditions for the clearing up of other shortcomings, such as unnecessarily high inventories and the detrimental structure of inventories.

The Set of Measures, after all, set as an objective and resolution of issues involved in a gradual shift to the evaluation of VHJ activity based on commercial contract fulfillment. So far, however, there has been no great progress in this area, even though it would be possible to draw on the experiences of certain other socialist countries.

Limits to Profit Utilization

So far, most of the participants in this debate are leaning toward the measurement of organizational merit in terms of profits (or indicators derived from them). I think, however, that we should not overlook several factors which make the use of profits and return on assets, as currently understood, less than desirable as measures of labor efficiency.

First, adjusted value added, profit and return on assets do not represent the final results of work, which are affirmed only by actual sales. These indicators are based on what has been produced and, therefore, include warehoused production, work in progress and the like. From this it follows that merit is not being measured according to the final impact, i.e., confirmation through exchange, but rather to a certain extent in a preliminary manner. This, as it happens, is one of the important factors in the unfavorable increase in inventories of work in progress, as well as of other goods where supply and demand are in equilibrium.

Second, profit and return on assets are much more sensitive to price changes than the criteria heretofore used. Neither economic theory nor practice has as yet provided unambiguous proof that profits, even under conditions of the most rational possible prices, i.e., prices of an optimal plan which are based on an optimal valuation of limited resources, provides for a volume and structure of production which will correspond to public interest. Nor do I think that the implementation of world price relationships, as proposed in discussions of the measurement of merit by Dr Vladimir Kyzlink and some other participants, would assure that profits would become an unambiguous measure of merit. World price relationships may not be implemented everywhere, because they can incorporate a number of world market influences which a socialist economy, as an economy managed by a plan, must filter out and not allow to have an impact on prices.

In addition, equating profits with efficiency (including the assurance of the requisite appropriateness) is based on the idealized supposition that prices will continually adapt themselves to the supply and demand situation, i.e., that very flexible price changes are the rule. Even given a certain loosening in price policy it may not be assumed that prices will immediately adapt to changing conditions of production and sales. In this situation, the problems of underpriced and overpriced products will always be present. This situation, under conditions of ongoing dominance of suppliers over consumers, necessarily leads to the maximization of profit indicators in conflict with the public interest. Attempting to exert pressure in the direction of greater efficiency by means of profits in this manner will frequently be futile.

Third, in addition to the price issue, which determines in a decisive fashion the possibility of utilizing profit as a measure of organizational merit, there are some other realities limiting the predictive role of profits as a criterion of efficiency.

Profits and return on assets are influenced by both extensive and intensive factors. One component of increased profits results from increased production (either directly as increased output, or directly as a result of the influence of fixed costs). A second component, which is not always predominant, results from savings in materials, wages, and financing costs. If overall profit is the measurement of merit, then enterprises will be heavily oriented toward increasing the volume of production (particularly where there is a high percentage of fixed costs), with questions of cost controls, product quality, etc. remaining peripheral.

Nor can it be ruled out, especially over the short term, that there may be a certain distorting of the picture of profit and return on asset through the improper reduction of some costs related to repairs, maintenance, work safety, costs related to environmental protection, the allocation of costs over time, etc.

The foregoing thoughts lead me to conclude that under our economic conditions, even given an objectivization of price relationships, it cannot be fully guaranteed that profits will reliably express the production efficiency of every enterprise, even though much may be improved in this area.

Objections to the simplified use of profits as a measurement of enterprise merit does not mean, however, that profits should be excluded completely. Realized profits must always be subordinated to a thorough verification of those factors which had an impact on them. Extensive and intensive influences must be analyzed, and the source of profits must be evaluated. Did the profits originate from failure to meet product-mix and quality targets, or by adding employees, or do the profits earned really express the true merit of the enterprise. In this I am in full agreement with Dr Karel Vlachynsky ("Economic Incentives: Real, Not Formal," HOSPODARSKE NOVINY, NO 19/1983). The basis for evaluation and for incentives should be thoroughly adjusted profits. We have taken some steps in this direction (adjusting profits for low quality), but it is essential to intensify such analyses. This direction has been adopted in the GDR as well. It is impossible to depend on profit criteria of an automatic nature. Developments to date have shown that we will not find a criterion which will simply and automatically indicate the comprehensive fulfillment of the functions of a kholzraschet entity.

In conjunction with the utilization of profits and return on assets as stimulative mechanisms, it would be appropriate to consider whether in some branches and sectors with an ongoing record of growth it might not be more appropriate to base the measurement of merit not on total adjusted profits, but rather on the increase in profits in comparison with the previous period. The mechanisms for providing plan incentives and of counterplanning have not so far brought the expected results. The tendency to adopt low plan targets, and also changes in plans, remains a permanent attribute of the behavior of the enterprise sphere. In areas where it is difficult to assure the quality of the plan for profits and where an ongoing increase in production is presumed, it would be more appropriate to measure merit according to actual profit increases. Experiences with tying economic incentives to growth figures have not been unambiguously negative. One need only choose an appropriate sector or branch.

Symmetry Between Merit and Accountability

An inseparable component of the strengthening of the merit principle in organizational management is the reasonable application of economic accountability for achieved performance. So far, however, the economic accountability of enterprises in many areas of activity (for instance, in their fulfillment of commercial contracts, their adherence to project

parameters for investment efficiency and the efficiency of technical development) has been relatively low, and has not been on a par with the evaluation of enterprise merit. There must exist a certain symmetry between merit and accountability for managerial results. Methodologically, some measures are already in place: penalty price reductions, accountability for the results of capital investment projects financed from the capital fund (with links to the development fund), accountability for exceeding wages payable resources, etc.

In practice, however, there is a clear asymmetry between merit and accountability. For instance, in 1980 penalty price reductions were some 2 percent of the level of preferential price treatment, and in 1981, 3.5 percent. Such relations certainly do not conform to objective reality in the sense of actual numbers of innovative and obsolete products, products of quality categories I and III, etc. The relationship between the development fund and the capital fund, which was intended to increase accountability for the carrying out of investments financed from the capital fund in instances where budgeted costs had been exceeded and construction schedules missed, is considered to be a very "harsh" penalty. Harsh, however, in the sense that it has turned out that exceptions had to be granted from this sanctional penalty at more than 130 construction projects, because development fund resources were inadequate to cover them. The effectiveness of this penalty does not lie here however: this is, rather, a question of the improper quantification of the possible consequences of shortcomings in centrally managed investment projects. Similar examples could be cited from the area of penalties for exceeding wages payable resources, penalties for low quality, etc.

It is my opinion that the merit principle is applied asymmetrically and one-sidedly in the khozraschet sphere. To be honest, however, it must be said that this is not only a question of consistency in economic policy, in implementing previously announced regulations and penalties, but a serious and as yet insufficiently studied question of economic theory. Economic theory concerns itself little with such problems as the boundaries between the economic accountability of a socialist enterprise and that of the individual, the optimal formation of enterprise reserve funds, etc.

The merit principle must apply fully to every activity of an organization.. It must be very intensive even in the area of capital asset replacement, because it is here that decisions are made that affect the national economy for decades.

In reality, however, the results of efficiency in the allocation of resources to technical development and capital investment have only an indirect impact on the individual participants in capital investment. In the area of capital investment, the system of economic incentives and accountability for performance is primarily based on what are known as enterprise economic incentives, i.e., for practical purposes on financing from internal financial resources.

In contrast to Dr Karel Vlachynsky, it is my opinion that these types of incentives cannot be considered as critical from the viewpoint of longer range managerial prospects.

These types of incentives will always be only a supplementary system which cannot, basically, change the approach of an enterprise toward efficient resource allocation. They have an impact on the personal incomes of individuals only from a distance, indirectly and over the long term. They cannot be seen as the main mechanism for intensifying the merit principle in capital investment. The center of pressure for effective innovation and investment should rest, above all, in an intensification of the role of financial criteria in decisionmaking regarding capital investment objectives and the research and development plan. An additional decisive mechanism ought to be a system of economic incentives and accountability for the individual participants in a capital investment project. Such a system, however, must be founded on individual economic incentives and accountability for investment efficiency.

Since we have gradually linked a portion of wages to certain qualitative indicators in the production process, why should we not also set this as an objective in the area of innovation and investment, where it is a question of much more significant decisions. If an enterprise does not fulfill the return-on-assets indicator during the year, then the incentive component of wages, funds and the like are lowered. If, however, a planned investment project does not achieve the projected effectiveness parameters (and deviations of 30-40 percent are not unusual here), the economic accountability for this performance is dispersed by discussions concerning changing conditions, the impossibility of fixing blame exactly and, in the end, winds up being integrated into the planned return on assets of the given year as an objective factor, and responsibility for investment inefficiency is lost.

The creation of a system of effecgive personal and collective material incentives for efficient capital investment is exceptionally demanding and difficult. It is, however, one of the critical paths to the generation of effective pressure on efficient capital asset replacement.

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CZECHOSLOVAKIA

PRICES AS ECONOMIC INCENTIVES VIEWED

Prague HOSPODARSKE NOVINY in Czech 17 Jun 83 p 3

[Article by Eng Vladislav Knobloch, Federal Price Control Bureau: "How Can Prices Stimulate?--Provide for Closer Ties Between Science and Technology With the Needs of Society"]

[Text] Effectiveness of research and development results that is expressed by a new product or a technological process must be assessed not only according to the attained technological characteristics, but equally from the viewpoint of economic criteria, primarily production costs, their impact on users and, primarily, their impact on foreign trade. Even though the significance of economic criteria is today generally accepted, in practice there still widely persists the type of thinking "research, develop and produce at all costs." For that reason many new products that provide their user with improved technical features do not meet the requirement of higher effectiveness, if the increase in production costs exceeds the increment in their utility effect on the part of the customer or the price increase achieved in exports. The problems of advanced economies are becoming concentrated not only in the capability for research and development of new productions, but primarily in the question for how much, at what costs and prices can individual utility values be produced. If introducing of production of new products is not to lead to losses in national income, it is necessary to unconditionally respect and continually update these criteria throughout the entire system of management.

In the spirit of the resolutions of the 16th CPCZ Congress and of the Set of Measures it is imperative to strive for correct and systematic application of price measures that had already been adopted and to adjust further proceeding in the area of prices to the demands posed by the current economic conditions. That means to have prices provide a substantially more active support toward achieving the key objective of technological progress, development and production of a competitive product, to include a competitive price. The viewpoint

of competitive prices requires that the socially necessary costs as the basis of prices receive consideration not only from the position of producers of new technology, but also from that of users and, in the case of exported products, that they be assessed by the criteria of foreign markets.

Application of Dynamic Assessment Criteria

The price system and the development of individual prices as well as of price relations that flexibly reacts to the development of internal and particularly external economic conditions provides criteria, incentives and stimuli for a meaningful orientation of scientific and technological development. Effectiveness of prices in these economic processes depends, on the one hand, on the intensity with which prices and economic instruments exert pressure on production, so that the latter modernize technology of production and production programs on the basis of scientific and technological development and, on the other hand, on how these assessment criteria are viewed through the system of management and planning of scientific and technological development.

The former concept of long-term static wholesale prices and their periodical comprehensive restructuring became unacceptable in the current dynamic development of economic conditions. This is so because such prices would provide for scientific and technological development and for production criteria that had long since lost their realism. For that reason wholesale prices must be continuously updated in connection with actual development of procurement costs for imports and for domestic production, accompanied by a systematic pressure on improved and more effective utilization of fuels, energy and raw materials in consumption.

New elements in implementation of price changes, aside from transition to continuous updating of the price system, are represented among others particularly by the principle of maximum cutbacks in the conspicuous increases in prices of imported domestic raw materials, fuels and energy. Thus, e.g., gradual annual increases in wholesale prices of fuels and energy that do not become projected into the wholesale prices of subsequent production and in the assessment indicators of the plan, it is reflected only partially, have an intensive impact on scientific and technological development and on other economy measures.

The approach being taken by the processing industry is that increases in prices for material inputs are largely not dealt with by changes in the prices of the existing assortment but in price setting and price stimulation of new products. In this way updating of wholesale prices for inputs is combined with a pressure on faster innovation of products of the processing industry, which represents a certain social countervalue for the possibility of projecting into prices the increases in material costs. Changes in wholesale prices also must not create more favorable economic conditions for keeping in production those products that are technically obsolescent, products classified in quality category III, products posing marketing difficulties, etc. Similar assessment is applied to products which fail to achieve at least minimal effectiveness in exports.

This approach to implementing the planned changes corresponds to the requisite harmony between the dynamism of technological development and the development of prices. However, this demanding task cannot be systematically implemented in isolation only in the area of prices, but also by corresponding and equally systematic measures in the methodology of planning, financing and the system of incentives. It is imperative to overcome in all areas the barriers caused by the so-far practiced approach which is inadequate in view of the current conditions.

Price and Cost Limits

Long-term outlook and planning are coming to the fore in all areas of management of economic processes. Everything is also in favor of using planning to influence the price level of new utility values already in the course of research and development. The times are long gone when it was enough to determine the price only after completed technological and production documentation, on the contrary, there is a need for using price limits to actively influence the prices of future products. Thus, the key purpose of price limits is to bring about maximum economy in design and technology of production, devising a new product in such a manner as to make its price competitive and its production profitable.

After long years of stagnation in this area a turnover was achieved in that price limits are obligatorily applied to all quotas of the plan of technological development with an output of products (except enterprise quotas) and to new products from newly built production capacities. Since 1981 price limits were expanded to quotas of the standardization plan and to nonstandard products that are prominent in volume and are supplied for capital construction. In preparation at the present is also application of procurement price limits in a justifiable volume to products that are exported and imported in significant volume.

The overall national economic effectiveness of price limits is still considerably hampered by tendencies for their unjustified increases, failures to comply with their setting and willful avoidance of demanding criteria derived from foreign markets. Thus, achievement of the goals pursued by price limits calls for: --in the case of research and development as well as preproduction personnel paying increased attention to the costs and prices of products under development, because the quality of their work determines in a decisive manner (on the order of 70-80 percent) the costs and prices of future products; in practice promulgate the principle that a technical solution cannot exist without an economic solution and orient to that end a substantial personal involvement of the relevant personnel,

--increase the compelling nature of price limits in such a manner as to have them express in the case of production assets any price decrease per unit of output or some other decisive attribute, in the case of products that will be exported improve their competitiveness on advanced foreign markets, in the case of products turned out by new production capacities reduce the production costs, etc., in the case of products (or their groups) that for the time being

show an inadequate amount of effectiveness--particularly in the relation between domestic and foreign prices--base the setting of price limits on the necessity for improving the status quo.

--use foreign price relations as the key means for setting price limits which would make it possible to effectively ensure that any increase in production costs connected with improving the specifications of existing products would be commensurate to the assessment given to such differences on demanding foreign markets; through proper use of foreign price relations it is possible to achieve utilization of the foreign level for deriving not only the technological, but also economical features to be used in dealing with individual tasks of the plan for technological development,

--have the relevant central authorities create conditions conducive to obligatory use of price limits for tasks of the plan for technological development in which the objective is a new technology of production,

--in the system of intraplant khozraschet [cost accounting system] specify the cost and price limits of tasks for individual intraplant units and tie the system of incentives to their obligatory meeting.

New Measures in Price Setting

The general requirement of scientific and technological development on the area of price setting is that in setting of prices due consideration be given to the results obtained so far in research and development, i.e., primarily technoeconomic attributes and other utility properties of new products. This is dealt with by different methods of price comparison; this relation is directly expressed by the so-called parametric principles of price setting.

Analysis and objectivization of relations between the level of prices and the extent of utility properties (specifications) has been successful so far in the case of simpler products, i.e., primarily products of basic sectors. It is very difficult to apply in the case of more complicated products, mainly machinery and installations where application of these principles is most needed. Quite unsatisfactory in general is objectivization of these relations from the viewpoint of conditions on foreign markets.

An important indicator for correctly expressing the relations between wholesale prices and economic attributes of new products are foreign price relations. The latter provide us with objective and irreplaceable information regarding the assessment of various utilitarian values that includes the technical level and quality of the compared products. The Set of Measures stipulated that they be systematically used in setting of price limits and prices.

Production organizations are not adequately prepared and often not even willing to use these new criteria, primarily because of the economic demands they pose. Foreign trade organizations do not provide the requisite data regarding foreign prices and price relations to production organizations, among other reasons, because that would enable them to assess the level of their commercial performance in exports or imports. It is imperative to achieve a basic reversal in this direction.

Introduction of new products of the highest innovative order is in some cases connected with costs that are so high that it is impossible to set a price that would be favorable to the producer as well as to the customer. In general it applies that the higher the order of innovation, the higher are the costs of technological development, whereby more distinct changes in technology and in organization of production temporarily cause higher costs of production.

As profitability of products of a high technoeconomical level is one of the stimuli of technological development, in such cases it becomes necessary to use in price setting forms other than stimulation through prices. This involves primarily:

--keeping prices temporarily in force in cases where it is advisable to use temporarily higher prices to exert influence on the user so that the technically advanced product find application under conditions where an even temporarily higher price makes it possible to achieve the requisite results;

--a system of double prices, i.e., a temporarily higher price for the producer and a lower price for customers in cases where it is necessary to create right from the beginning conditions conducive to a wide application of such viable products (e.g., microelectronic elements, robots and handling equipment), whereby the difference between these prices is to be covered mainly from the state budget; this will at the same time promote purposeful orientation of fiscal policy also in the "production-utilization" state.

Price Stimulation

Price control bureaus have been constantly concentrating their attention throughout the past two 5-year plans on improvement and development of the stimulative function of prices. The result of measures adopted in the course of the Sixth 5-Year Plan are rapid increases in wholesale price markups which in 1982 amounted to more than Kcs 4 billion and increased threefold in comparison to 1978.

An overall assessment of price stimulation shows its positive and to the point effects on increasing the share of technically advanced products of high quality, improved offer of new fashions and luxury workmanship products. Its further application and expansion is therefore fully justified.

However, analyses of the effects of price stimulation also point out some problems that will have to be dealt with. It can be summarily characterized by the requirement for a more critical assessment that must be applied both in actual evaluation of products as well as in determining the amount of preferential price markup.

Problems relating to practical implementation of penalizing technically obsolescent products have persisted for a long time. In this respect, no success has been achieved in implementing the tasks of the Set of Measures, nor those called for by CSSR Government resolution No 174/1980, the intent of which was to implement a more systematic approach in penalizing technically obsolescent

products. The initial reason for this protracted unsatisfactory state of affairs consists in the fact that customer organizations do not propose and the relevant authorities do not classify products which are technically obsolescent, or that state testing stations do not specify sufficiently demanding requirements on evaluated products. Economic criteria also receive unsystematic and inadequate consideration in evaluation of products. It is imperative to more effectively oppose trends of practically one-sided functioning of price stimulation (only in the form of preferential pricing). This does not involve some sort of balance between preferential and punitive pricing, but their application only to the extent that technically obsolescent or poor-quality products actually exist.

In keeping with the Set of Measures, price stimulation is being verified since 1981 according to effectiveness of exports. Price stimulation contingent on improved prices achieved during exports belong to most effective forms, as it is directly tied to the final results in foreign trade and provides for its bilateral application. For that reason its principles are used for improving the price stimulation of the technical level and quality of production assets.

Improvement of the efficiency of price stimulation calls primarily for:

--more systematic implementation of tasks stemming from the Set of Measures and the Presidium of the CSSR Government resolution No 174/1980 in the system of product evaluation and their price stimulation (evaluate a larger number of products, apply more demanding requirements, emphasize economic criteria in evaluation, proceed more systematically in the case of technically obsolescent products),

--expand price stimulation according to the effectiveness of exports and its own effects so that in the case of new products slated for exports it would lead to bringing domestic prices closer with foreign prices; this would more effectively orient price stimulation toward reinforcing the capability of the Czechoslovak economy for exports.

Linkage Between Domestic and Foreign Prices

Having prices efficiently affect scientific and technological development cannot be accomplished without gradual establishment of a closer linkage between domestic and foreign prices. If the continuously updated price system is to create conditions more conducive to the orientation of scientific and technological development, then it is imperative that it take sufficiently into consideration the conditions prevailing on foreign markets. This requirement is already fully met by the existing system of wholesale prices for imported raw and processed materials and products.

In this respect it is also necessary to gradually adapt (usually by means of prices achieved through exports) also the base of internal wholesale prices of domestic production which is still formed by planned production costs and the determined profit margin. It involves gradual introduction of foreign prices as an obligatory price setting factor for internal wholesale prices designed so that the prices achieved on foreign markets for exported production

have a direct impact in favor or to the detriment of the economic results of organizations; this would make it possible not to apply wholesale prices at all to products slated exclusively for exports. Also the price level of products supplied for the domestic market was to gradually come closer to the level achieved in exports, i.e., to make profitability of production supplied for the domestic market approach the profitability achieved in exports.

First steps in this direction are taken in plans of price development for 1983-1985, in verifying price stimulation according to the effectiveness of exports as well as in setting of prices and price limits in the form of foreign price relations. The share in which foreign prices in this first state affect the overall price level corresponds roughly to the amount of profit included in prices. Thus, it does not involve direct identification of our internal wholesale prices with the prices achieved in exports, but a differentiation of the profit included in prices of domestic production. In view of the fact that the system of incentives is essentially tied to profit, the effects of the mentioned forms of using foreign prices on the profit of organizations are considerable. The basic problem is to provide for using foreign prices not only toward increased stimulation of effective production, but also toward exerting stronger pressure on products that are inadequately effective and coordinate hereby the approach in all areas of management.

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CZECHOSLOVAKIA

LEASING POSSIBILITIES IN CSSR DISCUSSED

Prague HOSPODARSKE NOVINY in Czech 24 Jun 83 p 10

[Article by Dr Vlastislav Vondrak: "Leasing in the World and in Our Country-- To Buy or to Lease?"]

[Excerpts] Due to the accelerating speed of research and development [R&D], manufacturing enterprises need to buy more and more new, highly efficient machinery and equipment and other means of production. Enormous financial costs are necessary for their purchase in most cases and, therefore, all those who want to acquire such highly efficient modern means of production must have the necessary funds at their disposal. Such readily available financial funds are often scarce even in prosperous industrial enterprises. For that reason, in industrially developed countries the method of leasing (from the English word "to lease"--to rent) has become a common practice which has replaced direct procurement of new machinery and equipment of investment type, as well as of many consumer products. The following article deals with experience which confirms the advantages of this practice.

The increase in leasing which is gaining in importance in industrially developed countries is encouraged by the fact that scientific and technological progress is advancing so rapidly that in some cases machinery and equipment obtained as investment cannot be depreciated in time and already new, even more efficient equipment is needed so that the manufacturer may achieve productivity and quality of goods able to withstand the increasingly fierce and ruthless competition in world markets. In some instances the leasing method has already displaced conventional sales of some types of machinery and equipment in industrially developed countries.

Certain Soviet associations of foreign trade, such as Avtoeksport and Traktoreksport, have concluded leasing contracts with their foreign partner for leasing of repair facilities to service foreign customers; furthermore, Aeroflot is leasing transport aircraft and Sovtransavto vehicles for surface transport, etc.

What is the situation in our country?

Similarly, over the past years some forms of leasing transactions have been used in the CSSR--mainly in terms of consumer goods, for example, rental of television sets, and, in cooperation with foreign companies, of automobiles, or of scientific, laboratory and measuring technology, also in cooperation with foreign companies.

Nevertheless, methods of leasing have thus far made little progress in investment machinery for production, especially when decisions must be made whether to import directly or to lease the required machinery or equipment.

In the CSSR, the preconditions for leasing of machinery and equipment from foreign countries are stipulated in Instruction No 60 of 10 June 1977 of the chairman of the Czechoslovak State Bank. These directives make it possible for our manufacturing enterprises to lease machinery and equipment from the capitalist states if the conditions are advantageous for the enterprise. The Czechoslovak State Bank makes foreign exchange available for leasing of machinery and equipment from the capitalist states beyond the mandatory tasks of the state plan if the lessee, i.e., the Czechoslovak enterprise, assumes the obligation to produce and deliver to appropriate foreign-trade organizations goods manufactured in technological connection above and beyond its tasks stipulated by the specifications of the state plan and to earn foreign exchange for the payment of the lease. The appropriate authorized foreign-trade organization concludes leasing contracts with some foreign leasing company for imports of machinery and equipment.

One of the main preconditions for leasing from foreign companies requires that this legal form of import must be more profitable for our national economy than direct import, as for instance, in cases where machinery of equipment imported by Czechoslovak manufacturing enterprises will be used for a shorter period than its service life.

However, Czechoslovak enterprises may derive some additional advantages which favor leasing, such as, for example, cooperative production or other ventures with a foreign partner that needs access to technological equipment which will be repaid with exported goods made by cooperation.

Furthermore, Czechoslovak enterprises should consider leasing when purchasing licenses which call for imported machinery and equipment, so that foreign production technology may be used expeditiously. After all, prompt application of foreign licenses is often hampered precisely because our enterprise lack foreign exchange and investment funds above the plan for import of machinery and equipment which must be used according to the purchased license.

In such cases, the problem may be resolved by leasing contracts concluded at the same time with the foreign partner who is the grantor of the license. It is only a question of appropriate wording of the license contract with the use of the leasing operation. It is not the purpose of this contribution to discuss details, however, it may be mentioned that foreign companies are

accustomed to lease the machinery and equipment they deliver, but in most instances they are not properly informed that leasing agreements are possible even in the CSSR.

After certain hesitation and mainly because of insufficient experience as well as inadequate information of our enterprises about leasing opportunities a certain "breakthrough" took place in the CSSR in 1982 and the first leasing contracts have already been signed. Among enterprises which availed themselves of the advantage of leasing is, for instance, the Tiba national enterprise which has thus obtained the imported manufacturing equipment it needs.

Appropriate departments of the Czechoslovak State Bank and the Czechoslovak Commercial Bank which has also established a special section for leasing agreements offer our enterprises necessary counseling services about the opportunities of leasing in our circumstances.

9004

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CZECHOSLOVAKIA

HOW TO MEASURE WORTH OF ENTERPRISES DEBATE CONTINUED

Prague HOSPODARSKI NOVINY in Czech 17 Jun 83 p 4

[Article by Eng Vaclav Filip, Secretariat of the Governmental Committee for Problems of Planned Management of National Economy: "How to Assess Achievements of Enterprises? -- Wage Standards Were Lacking"]

[Text] In his article entitled "Less Romanticism about Indicators" published in HOSPODARSKE NOVINY No 18, 1983, university lecturer Milan Matejka listed variants A and B of products divided according to value of the production ($c + v + m$), profit and net industrial production. From this example, he drew conclusions that profit was preferable to net industrial production, because net industrial production might lead to overemployment and inefficient cooperation, and that he could see the advantage of net industrial production (or value added) in shorthand thinking.

Such conclusions are erroneous because they are based on assumptions that ignore the Set of Measures and its implementation. After all, profitability of the production cannot be assessed on the basis of the above-mentioned example alone. A correct assessment must consider the relation of wages payable to adjusted value added; this relation is set by the norm, which Prof Milan Matejka failed to consider. However, then the conclusions drawn from the above-quoted example run in the opposite direction to the author's conclusions (product A is more profitable for the enterprise because it represents 33.3 wage claims and only 30 wages are payable; product B is unprofitable for the enterprise because it represents 36.7 wage claims while 40 wages are payable).

Moreover, Prof Milan Matejka states that "the cause of the demonstrably fallacious decision is therefore in the very planning of net industrial production as a mandatory indicator." This statement does not agree with reality. The indicator of net industrial production, or of adjusted value added, is not stipulated as mandatory but serves only for orientation for the purposes of wage control.

The reason for Prof Milan Matejka's simplification may be his assumption-- quite deep-rooted in certain operations--that the more wage-intensive the production, the more profitable it is for the enterprise, because wages constitute a part of adjusted value added. This interpretation is incorrect because created adjusted value added (as a claim based on outputs after deducting

material consumption) is decisive, and not the amount of wages payable. Thus, if the enterprise produces goods that are less labor-intensive than the average labor-intensive production contained in the norms for the basic components of wages payable (stipulated by the 5-year plan or specified in the operations plan), it will earn more profits because then it will have more wages payable at its disposal. On the other hand, if it manufactures goods that are more labor-intensive (and thus, also more wage-intensive) than the average labor-intensive production based on the norms of wages payable, the profits of the enterprise are lower because then the funds for the payment of wages payable for the completed work will be lacking.

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CZECHOSLOVAKIA

FIRST-HALF 1983 PLAN FULFILLMENT SUMMARY PUBLISHED

Prague HOSPODARSKE NOVINY in Czech 15 Jul 83 p 2

[Article by Zdenek Karban, official of the CPCZ Central Committee: "Halfway Through the Year"]

[Text] The first half of the year, in which industrial production quotas were met to 101.2 percent, representing 50.5 percent of the year's quota, is now behind us. If we consider that most of the total number of 260 working days await us in the second half, we cannot afford to let up in our efforts.

Meeting of quotas for the third year of the Seventh 5-Year Plan will be of decisive importance to its ultimate success. This means that responsible managerial personnel at ministries and in enterprises will have to give careful thought to the open, frankly meant words spoken in this respect at recent party proceedings. Among them belong objections voiced against inflexibility in dealing with shortcomings in the supply of materials; however, higher economy in the use of materials will require their users to devote more attention to it and not just require it. Doing away with imbalanced fulfillment of the plan with subsequent crash efforts to catch up toward the end of the month will also call for an even more politically oriented approach to the meeting of quotas, more expedient adaptation of the style of work to the instruments of economic management, deeper penetration into problems and searching for optimum methods of their resolution. Responsible organizers will have to correctly orient development of work initiative toward decisive tasks and problems, toward improving the quality of products, toward dealing with shortage type products, toward higher effectiveness of production. The call for thinking matters over carefully is not to be interpreted as meaning that there is enough time left for everything. Resolution of complex economic problems cannot be accomplished merely by devising and adopting some measures, not matter how good they may be, it calls for specific actions.

Workteams and individuals are embarking on the leave which they earned by their full year's work. However, there can be no letting up in efforts to meet the plan, and that calls for using every single day.

It is gratifying that the sector of fuels and energy is meeting its basic production quotas. Now, before winter, more thought must be given to viable stockpiles of fuels and energy. Exceeding planned quotas brought good results in coal mining. We cannot afford to let this coal go to waste, organizations in the fuels branch must complete the agreed-upon storage facilities. At the same time it is desirable that a more of the mined coal find its way into the cellars of the populace, schools and tenement boiler rooms and other consumers. After all, not every winter season can be as clement as the last one. It will be further necessary to complete, in close cooperation with technological and construction contractors, in time and with high quality, the demanding program of overhaul and conversion of energy and gas generating systems. The go ahead sign must be given to all operations at nuclear power plant construction sites.

More systematic implementation of adopted measures must be carried out in the metallurgy/engineering complex and in electrotechnical engineering to avoid deviations from structural goals in production. Sectors must seek, in cooperation with foreign trade organizations, unconventional approaches to elimination of all causes that are detrimental to timely and high-quality meeting of export obligations.

Favorable development in supplying the domestic market with industrial goods, be it from engineering or from light industry, can leave no supplier in smug self-satisfaction. The current state is a reflection of the first contributions resulting from supplementary production and increased deliveries of shortage-type merchandise, even though its introduction calls for dealing more flexibly with many unresolved problems in preparation of production, logistics, production capacities, etc. The goal of providing in the current year 23 products that are in high demand by general engineering and 25 types in electrotechnical engineering must be considered to be the lower limit of the quota. Despite certain positive developments that have occurred, it will be necessary in all other sectors to overcome unresolved problems in providing a wide assortment of products, specifically by accelerating the innovation cycles.

Increased demands of carriers of all types of transportation toward the end of the first half of the year bear witness to the fact that imbalances still persist in production that make the work of transportation organizations harder. In the summer months, it will also be necessary to complete in time and with the requisite quality, in keeping with the devised work schedules, repairs of railroad superstructures and other installations to be ready for the upcoming autumn season of increased transportation. It is certainly gratifying that implementation of prescribed measures resulted in improved adherence to timetables in passenger transportation. However, its increasing frequency of use keeps revealing shortcomings in the standard of travel.

Gradual implementation of resolutions of the "Position of the Presidium of the CPCZ Central Committee On the Building INdustry" is reflected in the quantitative aspect of also meeting the plan of construction operations in production of building materials. From the viewpoint of the stipulated

objective--to attain by the end of the third quarter a 75 percent share of the year's plan and assure its successful completion--it will be necessary everywhere to step up the rate of progress, use of shift work, closer orientation toward finishing operations for summer activities. This applies not only to organizations in the building industry, but also to capacities of other industrial sectors, agriculture, etc.

Clement weather, the existing extent of simultaneously ongoing unfinished construction projects, meeting adopted combined socialist pledges and, particularly, the stronger coordinative role of the investor in finishing operations must be instrumental in helping to achieve a more clear-cut turnover, specifically in the case of those construction projects which are to be launched into experimental operation according to the plan.

The progress of construction projects will certainly not be enhanced by protracted negotiations, the exonerating excuses of managerial personnel so well known in practice, nor by any of the other maladies plaguing capital construction.

Some construction sites are showing good progress. If we examine the reasons for it, such as the redevelopment of the National Theater, the Barrandoc Bridge construction and some other recently completed construction projects, we can see that the roots of success in all these cases consist in maintaining order, discipline, continuous supply of materials, a viable operating mode, in purposeful mass-oriented political activities and the correctly channeled initiative of workers. For that reason, the investor must provide the impetus and with the aid of planners and preproduction units develop everywhere with the requisite deliberation a more efficiently functioning investment process in its entirety.

In the coming days, weeks and months we must focus our efforts on making preparations for the winter season, promoting initiative and then implementing the topics and proposals submitted by workers toward controlled use of fuels and energy by the whole society. With the use of experiences gained currently in its first stage, the efforts at economizing must be extended to continued economic use of raw and processed materials to achieve better comprehensive application and effectiveness of adopted measures.

We familiarized ourselves with the adopted resolutions immediately following the Eighth Plenum of the CPCZ Central Committee. They indicate, among other things, that accelerated application of the results of research and development in practice requires that ministries, economic production units and enterprises worked out a thematical and organizational approach and the relevant short- and long-term measures. Party organizations will adopt measures that will be conducive to their implementation as well as for their explanation and detailing.

We are waging a struggle to meet the tasks of the current year and meet the objectives of the controlled use of fuels and energy by the whole society as well as to implement systematically and uncompromisingly the

resolutions of the Eighth Plenum of the CPCZ Central Committee. All this must be connected as closely as possible with preparations of the plan for 1984. Proposals submitted by enterprises, as shown by initial findings, are not always in full compliance with the adopted directive. For that reason, the plan proposal must be fully discussed with workers much more systematically than has been the case in the past, so that unresolved problems can be actively solved in cooperation with higher levels of management. This resolve must find expression in continued well-considered promotion of the initiative of all workers, must find reflection in our everyday activities in the second half of the current year.

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CZECHOSLOVAKIA

SLOVAK INDUSTRIAL ACTIVITY, OUTLOOK DISCUSSED

Prague HOSPODARSKE NOVINY in Slovak 3 Jun 83 pp 1, 6

[Article by Eng Pavel Hrivnak, SSR Minister of Industry: "Responsibility and Activity of Industry"]

[Text] The course of meeting the state implementation plan for 1982, as well as the results achieved early in the current year, show that industrial enterprises in Slovakia on the whole did not manage to overcome more clearly the consequences of the crisis situation of capitalist countries and achieve more effective participation on non-socialist markets. Their adaptability to changing conditions proved to differ very substantially. There also occurred a considerable increase in political and economic pressures that made our economic life considerably harder. There was an imbalance in the meeting of quotas by individual production sectors. A considerable share of problems became concentrated mainly in the wood-working industry. In some cases, we even had to resort to adopting consolidation programs. However, there are differences in the effectiveness of efforts toward overcoming the complexity and demanding nature of conditions. In several directions, I view them as positive prerequisites for the future.

Innovation as Market Stimulant

Favorable has been, e.g., final use of production, whose total volume was exceeded in the SSR in 1982 by more than Kcs 1.1 billion. Of that amount, Kcs 992 million was achieved through exports to socialist countries, primarily the USSR. In this manner, the volume of our deliveries to socialist countries increased almost 17 percent in comparison to 1981 and that to nonsocialist countries, 9 percent. I deem the meeting of deliveries for the domestic market to be of extraordinary importance, as it was in keeping with the goals of the plan, whereby we contributed to strengthening the balance between supply and demand, particularly in priority items--textiles, clothing, footwear and furniture. We also managed to help improve the situation in regard to some product items and thus alleviate their prolonged shortage on the domestic market. Economic production units [VHJ] of our sector supplied the market with new, innovated products in an overall value of Kcs 3.8 billion in retail prices, whereby their volume increased more than 31 percent in comparison to 1981.

Most complicated was providing of exports to nonsocialist countries. We can overcome discriminative measures only by high qualitative standards, original concept of the technical level of products, flexibility and activity in adaptation to demands, and that we managed to accomplish only in part. Many enterprises failed to meet such demands: Slovcepa, Drevarsky a nabytkarsky priemysel, Slovakotex and Ogako VHJ failed to meet their quotas. Not even an improved system of incentives found the requisite response in them. Only Slovchemia, Tatrasklo and Slovenska polygrafia VHJ came close to the planned quotas. In the area of commercial activities, we failed to avail ourselves of all the possibilities last year.

The entire sector under our jurisdiction was developing efforts toward meeting the level of profit generation stipulated by the plan. This objective was met and profit increased 5 percent in comparison with 1981. The objective was met despite serious difficulties and adverse effects. However, the result attained in generation of profit could have been better if we had managed everywhere to make full use of new production capacities and had prevented excessive running up of costs, particularly nonproductive costs.

The basic lessons and conclusions from the previous years convincingly pointed out the inadequacy of demands placed on specific attainment of quotas all along the managerial axis of the sector. If we had been more active, e.g., in providing for exports to nonsocialist countries, and in all VHJ had taken an approach as resolute as that of Slovchemia, the results could have been better. Another example: Even though the capital construction plan was not met, we encountered enough problems with implementation of individual projects. In Drevarsky a nabytkarsky priemysel VHJ alone the losses suffered through a failure to launch production in newly built installations amounted to approximately Kcs 300 million.

A critical review of the previous year brings us to the conclusion that talking about problems is growing out of all proportion, valuable time is wasted through various consultations that are often superfluous, formation of various committees and other forms, but the main thing--clear perception of the matter at hand and a constructive approach to dealing with it--is not found at all places of work. This also serves as a confirmation that the resolutions of the Seventh Plenum of the EPCZ Central Committee still fail to adequately pervade the managerial style of performance.

Problematic Production Units

This year's tasks are very demanding not only from the viewpoint of the dynamism that is to be achieved in the current year in the sector as a whole, but first of all because of our perception of the conditions under which it is to be accomplished. The total volume of production is to increase 2.5 percent, but in the case of the wood-working industry this amounts to almost 7 percent. On the other hand, it is envisioned not to

increase production in the shoemaking and leather industries beyond their 1982 level. As can be seen, in the current year we are winding up in a situation wherein it is specifically those branches which had the greatest problems last year which will have to achieve the highest increases in production.

In the current year we will have to deal with some new factors. There are quite a few products for which the marketing volume envisioned by the plan need not be confirmed. We must, therefore, uncompromisingly demand that enterprises approach with a time lead and with more forethought their dealing with the demands of their customers at home and abroad, that they expand all efforts toward adapting to those demands, particularly by preparing new alternatives of supply which react to limitations on inputs and their structure. New capacities must make up for inevitable shortages stemming from the failure of old and already unusable capacities to turn out goods for the market. They must be ready to accomplish the transition to new production with quality and economy in results. But it seems as if it has already become a rule--each new capacity just creates a new problem. To the problems in Bukoza Vranov were added those encountered in the pulp mill in Zilina, after Pezinok and Bucina they crop up in Polomka and again in Bucina as well as in other productions and in some other VHJ of the sector. Some justification is always found, but not one was found to this day which would responsibly explain why the most serious problems become concentrated only in certain VHJ and enterprises.

We must be substantially more demanding on each other not to produce just for the sake of production, but with well-thought-out goals for its use with constant improvement of its quality measured by its share of products classified as First Degree of Quality, the extent of innovation and new quality from the viewpoint of the utilitarian properties of products, yet offering at the same time the requisite profitability. Inadequate demands placed on this area of labor, form in themselves from their very inception the reason for every failure!

Plan Priority

We see the priority role of the plan in production's finding an effective niche on the markets. Deliveries into the consumer goods inventory are to increase 2 percent in 1983 in comparison to last year, whereby this task is concentrated on light industry. Deliveries are covered to the planned level by supply-demand relations, even though in the textile and clothing industries there is still a need for doing away with inconsistencies in assortments that amount to roughly Kcs 300 million in retail prices. Any form of passivity and failure to adapt to the needs of the market exposes our enterprises and entire VHJ to complex consequences which could eventually culminate in nonutilization of established capacities and available manpower resources. We must, therefore, insist that if there is a failure in reaching agreement about the structure of deliveries according to the requirement of commerce, we will have to use the inventories that remain at the disposal of our production organizations for exports and then provide commerce with other needed products through imports.

Total exports to socialist countries are to increase 6.6 percent in the current year in comparison to last year. Responsibility for this task accrues primarily to the Drevarsky a nabytkarsky priemysel, Slovakotex and OGAKO VHJ. Based on the results of negotiations that have taken place so far, the export task will be fully implemented. In this manner, the SSR Ministry of Industry is ready to meet its obligations resulting from long-term trade agreements.

Exports to nonsocialist countries for the sector in the current year, in comparison to the preceding year are being increased 2.4 percent in wholesale prices and 4.7 percent in prices quoted as "all charges paid." Even after our negotiations with the Federal Ministry of Foreign Trade, our still outstanding tasks in the latter category amount to Kcs 586 million. This difference is constituted primarily by a failure to meet planned deliveries in "all charges paid" prices. In view of this situation, we agreed with the Federal Ministry of Foreign Trade on a solution which we submitted to planning organs for decision. At any rate, however, our VHJ must meet their quotas in wholesale prices fully and then, together with partner foreign trade organizations develop utmost efforts toward meeting their tasks in attainable "all charges paid" prices to the maximum possible extent.

Problems attendant to meeting the plan for 1983 were discussed by the SSR Government. We take a positive stance to the position of the government and of party organs regarding dealing with such problems as financing the deliberately assumed volume of capital construction in excess of the plan, the consequences of unconfirmed "all charges paid" prices in foreign trade as compared to those incorporated in the plan of exports, as well as their impact on the economic results of enterprises, to include also decisions regarding the timber species structure of deliveries, as well as some other procedures and approaches to dealing with problems. Now it is up to us to transform the confidence extended to us into deeds.

Significant Investment Tasks

Even with limiting of investments, we are faced in the current year with formidable tasks resulting from the great extent of simultaneously ongoing unfinished construction projects started in previous years and by concentration of tasks in the area of finishing construction projects and their launching into operation. These tasks are multiplied also by the results achieved in 1983 when, while it became possible to exceed the planned volume of projects and deliveries, it became impossible to complete some important construction projects within the planned deadline.

The planned volume of projects and deliveries for construction projects with budgeted costs in excess of Kcs 2 million for 1983 is assured of additional deliveries in the amount of Kcs 254 million, meaning that the conditions are conducive to making up for 1982 shortfalls. This creates

the prerequisites for completion of construction projects and launching of capacities in operation in the planned deadlines. Some unresolved inconsistencies still apply to the centralized construction projects of the SlovakoVHJ, specifically the following construction projects: completion of the Trenčín and Hlohovec Clothing Plants and the second stage of construction of the Slovema plant in Rajec.

According to the plan, to include making up for 1982 shortfalls, a total of 32 construction projects with budgeted costs of Kcs 7 billion, 12 of them obligatory tasks, are to be completed in 1983. This involves such important construction projects as Cyklohexanon in Štrážske, the Hygienic Paper Mills in Zilina, the Plywood Plant in Zarnovica, the Polypropylene Plant in Slovnaft, the Sala Agrochemical Plant, the Waste Water Treatment Plant Slovnaft and other capacities that through their production program are to meet significant tasks of the sector in the area of increased exports, supplies for the domestic market, but also for consumption in production operations within the sector itself, in addition to contributing to no small degree to continued and direly needed promotion of efficiency. In the case of some construction projects, the slow elimination of inconsistencies in supply/demand relations does not offer an adequate guarantee for launching them into experimental operation and their completion. For that reason, I emphatically pointed out to the relevant managerial personnel that they use systematic organization of implementation of construction projects and that they utilize the assistance of investment organizations to create constantly improving conditions for successful progress in assembly operations, particularly at the construction projects Polypropylene II in Slovnaft, intensification of the pulp mill and part of the power generation installations at the Bukoza Plant in Vranov, Plywood Plant in Zarnovica, modernization of the sawmill in Liptovský Hradok and some other construction projects.

We also cannot be satisfied with the state of preliminary planning and project preparation for construction projects slated to be launched in 1984-1985. In spite of specified tasks and verifications, despite all the implemented measures, an unsatisfactory state of affairs still persists in the case of the following construction projects: completion of the MDZ 01 Plant in Bratislava, thread production in Dunajská Streda, as well as the projects of the state goal-oriented 02 program for savings of fuel and energy in the Drevarský a nabytkarský priemysel VHJ. The relevant general managements of VHJ must concentrate extraordinary efforts on elimination of existing shortfalls in preparation, because they pose a threat to the deadlines for approval of projects and preliminary projects and, thus, also the planned launching of construction.

Struggle for Effectiveness Begins with Research

Today more than ever in the preceding years, research and development [R&D] progress must become one of the basic forms for meeting tasks in our sector as well. Realistic conditions for it have already been created, primarily through establishment of R&D base with more than 7,500 personnel organized in dozens of independent research institutes, in 4

special purpose organizations and 65 other work centers. For the sake of illustration, in our sector there are more than 30 R&D personnel per 1,000 workers. It follows that this involves a capacity whose attained results should have a more conspicuous impact.

Our research has achieved many positive results which have significantly contributed to the development of our area of jurisdiction and to structural changes in its individual branches and sectors and have received the high recognition they deserved. Nevertheless, we still have no small unused hidden resources in R&D management, in the performance of its own facilities and in utilization of achieved results. The approximately Kcs 900 million expended annually on technological development must be utilized with an ever-increasing sense of effectiveness and purpose. It is necessary, therefore, that general and technical managers of VHJ and managers of enterprises systematically monitor the activities and efficiency of performance of the R&D base installations they control and that by applying an effective system of motivation and incentives they create everywhere a climate conducive to creativity, such as practiced over the past period by the general management of Slovchemia, where they check all independent work centers on the basis of the attained effectiveness of R&D. An analogous approach should be extremely helpful to, e.g., the Drevarsky a nabytkarsky priemysel and Slovcepa VHJ.

I ask of R&D personnel in the first place that they develop initiative by using their own solutions in submitting proposals, that they procure suitable licensing agreements and their further creative application.

In this manner, we must orient all R&D activities even more emphatically with the aim of implementing creative results into practice in awareness of its high social involvement. Let me point out the excellent cooperation with production maintained by comrades from the Research Institute for Petrochemistry in Novaky, the Research Institute for Textile in Zilina and the Research Institute of Chemical Technology in Bratislava.

We must demand that managers of production enterprises and their technical deputies become direct partners and coworkers in management of research institutes, that they regularly, and with a time lead, take interest in which of the problems solved by one or another institute they could use in the enterprise they manage, that they solicit through specific suggestions from the institutes solutions which would improve the effectiveness of the production under their management. They must assign prime significance to everything that can promote progress in production. Through their technically demanding socially justified requirements on the activities of the R&D base they must not only help to upgrade the demanding level of R&D, but also that of efficiency, achievement of high technical levels and quality in all their efforts.

R&D must become one of the areas in which our young technical generation can find its self-realization. The most effective form of development of production, the cheapest investment input still remains the movement of improvement promoters. Based on its effectiveness, but also on its

political significance, free paths should be provided for it everywhere. Any unjustified contention, especially if it involves litigation, must thus be regarded as a threat to work initiative.

Support Provided by Socialist Integration

Another means for meeting planned quotas, even in the current year, must be more intensive specialization and cooperation in production and in preproduction stages with fraternal socialist countries, particularly the Soviet Union. The results attained so far are not commensurate with our possibilities, tasks or goals.

The share of sales stemming from specialized agreements in overall sales to socialist countries represents in our sector 23.4 percent, reaching 24.1 percent on a nationwide scale, but their distribution among individual branches is imbalanced. In the chemical industry it is almost 43 percent, but in the cellulose and paper industry it is but 2.3 percent and in light industry 3.2 percent. No agreements at all were closed in the glass and printing industries and the state of affairs in the wood-working industry is largely distorted through exportation of furniture to the USSR as part of a skeleton agreement, amounting to almost nine-tenths of the attained share.

To achieve emphatically better results in this respect is primarily up to comrades in the wood-working and light industries, specifically by adopting such integration measures as would promote use of a high share of R&D results the same way it is being successfully applied, e.g., in the chemical industry. Their cooperation starts with joint R&D and continues up to actual implementation which forms the basis for specialized agreements. Such an approach must be adopted everywhere. In addition, in light industry we must also strive for a continuous expansion of mutual exchange of products. A planned, wider exchange of product assortments will produce the same result as would specialization of production. We must remain aware of the fact that accumulation of production, whose negative effects are already becoming apparent in light industry, is becoming a serious problem. Underestimating this fact could prove detrimental.

The Year Ahead of Us

We must be equally serious in pondering the development of industry in 1984, because the year ahead of us is becoming more and more another immediate goal of our planning of efforts and newer tasks. According to the adopted government resolutions, the tasks stipulated in the Seventh 5-Year Plan for the year 1984 must be regarded as guidelines for working out an implementation plan.

Nevertheless, from the viewpoint of meeting planned quotas and their realistic concept, expectations regarding the coming year can become affected to a certain extent by the development which is occurring in the current year. In this context, we will have to show much more determination

in resolving some of the persisting problems in the wood-working and furniture industry VHJ, where for the time being they have not managed to at least minimally meet the quotas incorporated in the consolidation program, or in the cellulose and paper industry which would up in a similar situation, whereby undesirable and serious consequences could produce very complex and extremely tense relations within the plan of either VHJ. This can involve complications in marketing possibilities as well as other problems.

It is, therefore, inevitable to thoroughly analyze and balance all these prerequisites for the coming year so as to retain the objectives incorporated in the Seventh 5-Year Plan for the year 1984. Thus, preparation of the plan for the coming year will become an illustrative verification of the degree to which managerial personnel of VHJ and enterprises have acquired a new way of thinking and performance in keeping with the resolutions of the Seventh Plenum of the CPCZ Central Committee and the followup plenum of the CPSL Central Committee.

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MAY ECONOMIC RESULTS DISCUSSED

Prague HOSPODARSKE NOVINY in Czech 1 Jul 83 p 2

[Article by Dr Eng Vaclav Cap, ScC, Federal Bureau of Statistics: "May 1983"]

[Text] The development of our national economy in May is following the previous pattern. The fulfillment of production plans calls for compliance with the objective of restoring a more dynamic economic development. Economic needs are being fulfilled more deliberately and gradually. However, our capability to increase exports to nonsocialist states remains a chronically sensitive point. Pressures for conservation of raw materials, materials and energy are reflected in the observation of the plan for reduction of costs and thus, in the positive achievements of financial management. No dramatic improvements in the development of efficiency have been evident in other sectors. The fulfillment of the plan in branches of production makes it possible to maintain the living standard achieved by our population. As compared with April, the dynamism of industrial and agricultural production in May has been accelerated. In agriculture, the weather in May encouraged hopes for a bountiful harvest. In construction, production has further slowed down. The results for May in foreign trade indicated improved exports to nonsocialist countries. In comparison with preceding months, the growth of financial incomes was further decelerated and the growth of expenditures accelerated in agreement with the plan.

In comparison with the same period of 1982, the level of industrial production rose 1.8 percent in May and 3.2 percent over the first 5 months of 1983. The state plan for the year was fulfilled 41.7 percent, i.e., the share was relatively higher than last year. The same picture appears from overall evaluations of the enterprise production plans which were overfulfilled 1 percent in the 5 months of 1983.

The fulfillment of production plans was reflected in an overall favorable fulfillment of sales plans. Deliveries for the domestic market were 2.7 percent higher from January through May than in the same period in 1982, deliveries for capital investment were up 1 percent, and subdeliveries for production and operations up 2.4 percent. The successfully fulfilled deliveries for exports to socialist countries were up 3.7 percent.

The efficiency of exports to nonsocialist states is declining, as confirmed by the 5.1 percent growth of deliveries for exports in wholesale prices and their 1.5 percent decline in fco prices. This drop has not been balanced by lower import prices from those states. In general, our industrial enterprises are meeting very well their plan of adjusted value which is decisive indicator for wage control. According to preliminary data, in 4 months of the year our industrial enterprise overfulfilled their plan in this indicator by 2.2 percent.

The differentiation in the fulfillment of the plan between industrial enterprises has intensified. More than 25 percent of all enterprises failed to meet their production plan in 5 months and more than 23 percent failed to meet their plans in adjusted value added. From the review of individual enterprises it is obvious that the situation of enterprises is increasingly differentiated depending on how they are creating preconditions for their further development by applying sciences and technology and by advanced methods of organization. The increasingly stiff and challenging competition in world markets demands that science and technology be among the decisive factors in the conceptual development of every field of production.

Judging from the development in individual branches, the structure of our industrial production is changing in accordance with the plan. The flaws in the structure of the line of products and in the slow adaptation of the line of goods to economic demands and needs are reflected in continuous frustrations of the supplier-consumer relations. Our engineering industry remains the most rapidly developing industrial branch. As compared with the same period of 1982, the production in electrical engineering industry increased 6.8 percent in 5 months, in general engineering 4.4 percent, and in heavy engineering 2.5 percent; general engineering industry could have achieved even more dramatic progress, where nearly 50 percent of its enterprises able to meet their of production plans (more than 25 percent failed to fulfill adjusted value added).

Enterprises of the wood-processing industry have achieved a relatively good growth of 4.9 percent; because of deliveries from agriculture, our food industry's growth was 5 percent, which was also due to the effect of the sugar production campaign nearing its completion early in the year. Enterprises of the cellulose and paper industry failed to meet their production plans due to shortcomings in the construction of new facilities. Despite its deceleration, production growth in the metallurgical and chemical industries was higher than the annual plan had projected.

Construction enterprises are gradually losing their edge in the fulfillment of the production plan gained in the first quarter because in May they failed to meet their plans (except for construction enterprises of the Czech Ministry of Construction and the Federal Ministry of Metallurgy and Heavy Engineering). The volume of construction works and deliveries in May remains on the same level, but since the beginning of this year it was 4.2 percent higher than in the same period of 1982. In the first 5 months,

construction enterprises overfulfilled their production plans 1.4 percent, however, 34 percent of all enterprises failed to meet their plan. The failure to meet various stages and deadlines in certain vital construction projects is very keenly felt in our economy.

On the whole, the weather thus far has been relatively good and together with proper soil preparation it promises an ample harvest. The situation of grain and row crops is good but it depends on our organizational skills to harvest all crops without losses. In many areas, the progress of haymaking thus far did not confirm that ability. The harvest of green fodder went hand in hand with excellent fulfillment of the timetable for milk deliveries. Agricultural plants overfulfilled their plan 7.1 percent and delivered 13.9 percent more milk than in the same period of 1982.

Our dairy industry should learn how to take advantage of this favorable situation and improve substantially its supplies in terms of the selection and quality of products. Furthermore, the procurement of meat and eggs was fulfilled satisfactorily. As compared with the first 5 months of 1982, the procurement of slaughter livestock and poultry was up 2,400 tons, of milk up 236 million liters, and of eggs up 80 million eggs. Further good operation of agricultural plants will determine whether the chance to raise the standard of production will not be wasted and the disproportions between the production of crops and the production of live-stock may be balanced.

Our economic organizations continued to fulfill to satisfaction their plan for cost reduction; thus, the plans of profits and profitability are higher than stipulated in the annual plan. In 4 months the costs, without the effect of foreign trade, amounted to Kcs 89.9 per Kcs 100, i.e., Kcs 0.26 less than stipulated by the plan for the year.

The results for May in foreign trade may be given good marks. Exports to, and imports from, the socialist countries came near to the relations envisaged in the annual plans. Exports for the first 5 months were up 7.6 percent, imports up 13.5 percent. Exports to nonsocialist countries have not increased as envisaged, and for that reason, the prospects for imports are being carefully studied. In comparison with the first 5 months of 1982, exports to those states were down 2.3 percent and imports down 12.2 percent. Prices in foreign trade with socialist countries increased, with nonsocialist countries declined.

Our domestic market was marked again by considerable stabilization in May. With cash incomes of our population 4 percent higher in the first 5 months than in the same period of 1982, costs were up 3.7 percent. Retail sales in main commercial systems were up 2.7 percent in the first 5 months, with a 4.4 percent increment in May. Sales of industrial goods, footwear and furniture confirmed that the demands of our population increased above average. The unfulfilled purchasing power of our population continued to grow in May; deposits in May amounted to Kcs 185.8 billion, Kcs 13.6 billion higher than 1 year ago; currency in circulation was up Kcs 3.5 billion, amounting at the end of May to Kcs 51.2 billion.

Basic Indicators of National Economy's Development in May 1983
Increases Over Comparable 1982 Period (in percent)

	January May	-May	State Plan
Deliveries of the Centrally Administered Industries for:			
-investments at wholesale prices	-	1.4	-4.1
-domestic market			
at wholesale prices	-	2.7	0.5
at retail prices	-	1.8	2.0
-export to socialist countries			
at wholesale prices	-	3.7	-0.3
at FOB prices	-	5.5	0.7
-export to nonsocialist countries			
at wholesale prices	-	5.1	-2.0
at FOB prices	-	-1.5	0.3
-other sales for industrial production			
and other operations at wholesale prices	-	2.4	-
volume of industrial production	1.8	3.2	1.7
average number of employees	0.8	0.8	0.7
labor productivity based on industrial production	1.0	2.4	0.9
Construction			
construction work performed with internal labor resources	0.0	4.2	-0.1
average number of employees	0.2	0.2	0.6
labor productivity based on construction work	-0.2	-0.2	-0.7
housing units delivered by contracting enterprises	3.8	-14.8	-6.1
Procurement			
slaughter animals (including poultry)	-4.0	-0.3	-1.2
milk	16.4	13.9	1.1
eggs	13.9	7.1	2.2
Retail Turnover			
of the main trade systems	4.4	2.7	2.1
Foreign Trade¹			
export to socialist countries	2.4	7.6	3.7
export to nonsocialist countries	8.8	-2.3	1.4
import from socialist countries	5.1	13.5	10.0
import from nonsocialist countries	-17.6	-12.2	8.6

[Table continued from previous page]

Personal Earnings	2.6	4.0	1.6
os which incomes from wages	2.6	3.1	1.2
Actual cash expenditures	5.4	3.7	2.5

FOOTNOTES

1. Data on actual results refer to actual transactions and the state plan (in contrast to overall actual results) does not include unplanned actions within the framework of cooperation, unplanned reexport trade, exchanges and conditional trade transactions, etc.

9004
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CZECHOSLOVAKIA

SBC EVALUATION CRITICIZES INVENTORY MANAGEMENT

Prague HOSPODARSKE NOVINY in Slovak 8 Jul 83 p 4

[Article by Eng Dusan Paulik, Czechoslovak State Bank, Central Division:
"Room for Improvement--Findings About Inventory Management"]

[Text] The CSSR Government specified in its Resolution No 157 of 27 May 1982 a series of tasks to provide for a planned development of inventories. This was followed up by CSR Government Resolution No 193/1982. After 1 year--in May 1983--the Czechoslovak State Bank [SBC] assessed how those tasks are being met. The key findings are presented in this article.

Our society cannot be indifferent to the volume of inventories with which it operates, what extent of the generated national income it is tying up in circulation. At the current stage of economic development of our socialist economy, when intensification factors of growth are becoming the key prerequisite for further progress, it became impossible to hold on to the positions of the production sphere, which, in view of protracted and persisting shortcomings in the supply/demand relations, had a tendency to form maximum stockpiles in the interest of a continuous rate of production. For that reason, some of the incentive and other measures adopted after 1980 are expected to encourage effective and proportional development of inventories.

Persistently excessive inventories and the attendant necessity for emphasizing the interest of the economic sphere in this area of the process of economic renewal led the CSSR Government to stipulate by its Resolution No 157 of 27 May 1982 a series of tasks designed to promote utilization of excessive inventories in the year 1982 and to provide for planned development of inventories in the subsequent years of the Seventh 5-Year Plan. This CSSR Government Resolution and the followup CSR Government Resolution No 193/1982 and the SSR Government Resolution No 180/1982 specifically called on ministers having jurisdiction over industrial and construction organizations to undertake screening of unused inventories according to their state on 30 September 1982 and to provide a comprehensive assessment of the results of this screening by 31 December 1982.

Among other tasks, these resolutions called on the ministers controlling industrial and construction organizations to carry out by 31 December 1982 an analysis of the activities of marketing and supply organizations, with the objective of implementing specific measures promoting a more flexible generation of ready marketing inventories in the requisite volume and structure, shortening of delivery deadlines and the reducing consumer goods inventories among customers.

Call for Higher Responsibility

The SBC undertook, on the basis of departmental reports as well as of its concurrent investigation carried out along the line of its own organizational units, in May 1983 an assessment of how those tasks were met. This assessment showed that managerial organs of the economic sphere from the ministerial department level down to enterprises and plants on the whole took a responsible attitude toward their implementation. As a rule, the tasks were discussed by management of departments and VHJ [economic production units], published in the form of instructions by the relevant ministers or their deputies and by general managers of VHJ. Most of the adopted measures are adequate for the specific conditions and are responsive to the necessity of improving the level of inventory management. Nevertheless, just as in the past, the bank also encountered in isolated cases a formalistic approach, consisting primarily in the fact that some measures are of a rather proclamatory nature, merely reproducing in another form the government resolution's tasks. Delays in these efforts in some places even required the bank to apply pressure.

On the whole, a more responsible approach by the economic sphere became manifested to a certain extent in the development of inventories. This is documented by an increment in inventories in enterprises of the ministries of industry and of construction in 1982 in an amount of Kcs 2.3 billion, which in comparison with 1981 (Kcs 7.3 billion) and 1980 (Kcs 9.4 billion) is substantially lower. Another positive development is also improved development in the structure of inventories. For example, inventories of materials increased 3.3 percent in 1981, only 1.7 percent in 1982. Yet this development was not favorable and optimal to the point where it would suffice to meet the planned goals of last year. An analysis of the state of inventories as of the end of 1982 showed that none of the monitored departments met the task called for by the government resolution, namely complying with the planned level of total inventories as of 31 December 1982, even though, and this is of interest, these departments, save for a few exceptions, did comply with the planned level of controlled inventories.

This confirms the widely known fact that the economic sphere not only does not devote the requisite measure of attention to the so-called category of uncontrolled inventories (forming roughly 25-30 percent of total inventories), but that there were even instances in which attempts were made at dealing with problems in the area of controlled inventories at the expense of this category of inventories. As of 1983 this problem is partially resolved by stipulation of the maximum obligatory turnover

in inventories even in the case of marketing organizations. However, the final solution must be seen, as the SBC proposes for the Eighth 5-Year Plan, in reinforcing the significance of the organizations' own resources and their more clear-cut incorporation into the financing of inventories.

Some positive trends also continued in the first quarter of 1983 when, in comparison with the same period of last year, the development of inventories in most ministries of industry and of construction was more favorable, that is, the rate of growth was slower (1982, Kcs 1.8 billion; 1983, Kcs 1.0 billion) even though the rate of production and output was considerably higher (0.8 percent in 1982, 4.0 percent in 1983). This accelerated the turnover time for inventories in the first quarter by 3.2 days which exceeds the yearly plan quota by 0.1 percent. Despite the improved development of inventories in comparison to last year, for the remainder of the year, particularly in some departments, there remains the demanding task in abiding by the yearly planned development of inventories, primarily in utilization of excessive inventories from past years (FMHTS [Federal Ministry of Metallurgy and Heavy Engineering] Kcs 1 billion, CSR and SSR ministries of industry Kcs 0.9 billion, construction Kcs 1.3 billion).

Screened Out: 3.13 Percent

In regard to the results of inventory screening, the SBC found out that unused inventories screened out as of 30 September 1982 amounted to a total of Kcs 8.2 billion which represents 3.13 percent of inventories as of the end of 1982. The absolutely highest volume was screened out by organizations of the FMVS [Federal Ministry of General Engineering] (Kcs 2.8 billion) and FMHTS (Kcs 1 billion), but relatively by the SSR MSv [Ministry of Construction], namely 7.1 percent of total inventories. The screened out unused inventories very probably included all the unused inventories that were screened out in the preceding period but which could not be liquidated by the end of September 1982 (approximately Kcs 3 billion).

It ought to be emphasized that the results of screening did not fully bear out the goals for unused inventories in the national economy to range between 5-10 percent of total inventories. Only two departments exceeded the 5 percent share (FMVS and SSR MSv).

From the viewpoint of the structure of screened out inventories, it involved primarily production inventories, and to a lesser extent--though not negligible--marketing inventories. Specifically, e.g., inventories of replacement parts, materials for discontinued types of products, inventories at temporarily discontinued and cut-back construction sites, assorted indirect material. From the aspect of the orientation of utilization of screened out inventories, the largest volume accrues to own consumption (approximately 54 percent), most of its in 1983 (over 80 percent), roughly 21 percent for procurement through middleman agencies and approximately 13 percent for physical liquidation.

The bank's findings show that organizations devoted more attention to screening out of inventories in 1982 than in 1981. In an overwhelming majority of organizations the screening out was carried out systematically according to Decree No 49/1981 of the Codex and in keeping with the tasks stemming from CSSR Government Resolution No 157/1982. Thus, there was no recurrence of the situation of 1981 when, despite the validity of Decree No 49/1981, many enterprises and VHJ either did not undertake any screening out at all, or did so just formally, when reports by departments about the results of the screening were not based on screening out an enterprise level, when only inventories in excess of the plan were subject to screening out and not the entire inventory on hand, etc. The positive aspect of this action was also the fact that screening out of inventories was participated in also by some additional departments and organizations engaged in industrial and construction activities (transportation, agriculture, national committees) which accounted for unused inventories in the amount of Kcs 0.9 billion.

However, this does not mean that everything was in order everywhere and that the screening out of inventories progressed without any problems. Though in isolated cases only, the bank's branches did uncover shortcomings whose resolution they routinely and systematically demanded. Thus, e.g., during inspections they found that some enterprises did not screen out all of their unused inventories (e.g., Zbrojovka Brno, Plastika Nitra, North Bohemian Paper Mills in Steti, Chemiceluloza Zilina) and that screening out was not accomplished in the prescribed term (e.g., Duslo Sala, Slovnaft Bratislava).

It should be pointed out that the bank saw to it that the screening out be accomplished in time, that screening out include all types of inventories and that it be comprehensive. In the course of screening out, it made sure that enterprises use as a basis a realistic assessment of the need for inventory in individual types and that they differentiate them in keeping with the provisions of the mentioned decree. It required that screening out be conducted on the basis of computerized inventory records or according to storage records and that dealing with problems be participated in by the widest possible number of personnel and units.

Weak Points of Intermediation

Assessment of the results of screening out of unused inventories pointed out some aspects of the effects of Decree No 49/1981 of the Codex. Among its positive aspects is undoubtedly the fact that it introduced a uniform system for incorporating unused inventories into the economic renewal process, enabled the parties concerned to engage in this process organizations slated for this purpose. However, on the other hand, the assessment also pointed out the problems of its application, particularly in regard to the functioning of so-called intermediary organizations which have not played the anticipated role of mediating between social supply and demand in this action.

The bank's findings were fully substantiated by the experience made by Eng Ludmila Malikova from the New Metallurgical Plants of Klement Gottwald in Ostrava that was published in HOSPODARSKE NOVINY no 17/1983. It will obviously be necessary to give some thought to the activities of intermediary organizations and to adopt measures which would make it possible, e.g., to prevent them from rejecting without cause submitted offers, eventually completely ignore the appeal of organizations, but which would also create better conditions for the sale of screened out inventories. On the other hand it must also be stated that the approach of owners of unused inventories has not always been fully in keeping with the applicable decree. There have been cases of, e.g., sale of offered unused inventories without the knowledge of the relevant intermediary organization, incomplete and inaccurate filling out of offer listings, etc.

An analysis of the activities of marketing and supply organizations carried out under the provisions of CSSR Government Resolution No 157/1982 of the Codex together with the analysis carried out by the bank pointed out the low level of the meeting of their key functions that consist primarily in expedient and ready supplying of consumers with so-called below-limit products. This becomes manifested, e.g., in the fact that:

--the average terms for order to expediting are very long (Ferona 4-5 months, Sigma 8 months, Tesla Eltos 10 months for instruments, Office Machinery takes 12 months for domestic and 16 months for import orders, Chema Pardubice 100 days, Barum 105 days, etc.);

--the percentage of railroad deliveries is still very low (Ferona 3 percent, Sigma 4.3 percent, Elektroodbyt 0.8 percent, most of the VHJ of the CSR Ministry of Trade 1-3 percent, etc.);

--the percentage of readily available deliveries is low (Ferona 14.1 percent, Sigma 10 percent, Elektroodbyt 5 percent, Association for Marketing of Aniline Dyes, marketing organization Pardubice 15 percent, etc.);

--the share of ummet deliveries is high (Sigma 29.2 percent, Office Machinery 27.5 percent, Construction Materials Prague, in the case of some materials, 50 percent and more, etc.);

--turnover time of inventories in marketing organizations is quite long (Chema Pardubice 300 days, Tesla Eltos 180 days, etc.).

What Is the Bank's Approach

Departments and VHJ for the most part justify the poor level of providing marketing and supply activities by inadequate sources for some products, exaggerated and less than realistic demands of customers, the seasonal nature of deliveries to meet demand, poor condition of storage facilities or of machinery. Some of these arguments have partially objective basis, but the bank's findings show that there are considerable unused resources in the operation of intermediary and supply organizations. On the basis

of their detection, together with dealing with existing problems, last year the SBC applied more resolutely some rules in its credit policy which, as it turned out, not all enterprises, VHJ and departments always correctly understood.

For example, there are objections to the effect that the bank insists on lowering the inventories of these organizations and in this manner prevents them from performing their functions better, that the bank refuses to grant credit for inventories in excess of the plan, that it tightens up refinancing of debts, which creates financial difficulties for supply and intermediary organizations, with subsequent increases in the costs for circulation due to payment of penalties for late payments, etc.

By way of comment on the above it should be stated that:

1. The bank is in no way preventing the departments and VHJ from stepping up generation of inventories for the market, so long as these inventories are generated within the framework of the overall planned inventories of the department and are balanced by savings in production inventories. The bank supports the policy for generating inventories for the market and also offers preferential treatment to marketing and supply organizations through granting credits for these inventories at a lower preferential interest rate.
2. In some cases, granting of credit for inventories in excess of the plan was limited as a preventive measure against undesirable transfer of inventories from the production sphere, the objective being to achieve in this manner adherence to the planned level of controlled inventories.
3. Credit pressure in cases of increased volume of outstanding debts was applied by the bank mainly due to larger imbalances in the development of billing and as the result of other shortcomings in the operation of organizations, connected mainly with an effort to achieve liquidation of outstanding debts after expiration of their term for payment.

Assessment of the results of screening out of inventories and of the activities of marketing and supply organizations confirmed the correctness and justification of the measures adopted by CSSR Government Resolution No 157/1982. It pointed out the tremendous unused resources of our economy that in no small measure are also constituted by an inadequately systematic and responsible approach by some management personnel in the economic sphere. But at the same time it pointed out the need for creating the necessary prerequisites for full implementation of the objectives and goals contained in the relevant normative modifications.

A qualitative change in the approach of enterprises, VHJ and departments to the problems of improving the effectiveness of utilization of inventories offers for the future a certain guarantee of achieving a permanent trend

toward their proportionate development. This at the same time has as its prerequisite the requirement that screening out of unused inventories be interpreted as a lasting, permanent process of their incorporation into the process of economic renewal. The SBC will promote attainment of these objectives, specifically by systematic application of all aspects of an active, differentiated, restrictive credit policy in close cooperation with other instruments of the economic mechanism.

8204
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CZECHOSLOVAKIA

SCIENTISTS CONCERNED ABOUT SOIL LOSS DUE TO COMPACTING

Prague PRACE in Czech 9 Jul 83 p 4

[Article by Engineer Jiri Lhotsky, DrSc, Research Institute of Soil Improvement, Prague: "About the Soil; Compacted Soils Are Depriving Us of Yields"]

[Text] Soil compaction is a serious problem in all countries with developed large-scale farming. In our country it has become intensively noticeable during the past decade. Compaction is either the natural property of heavy clayey soils; or--and this is our main problem at present--it is a secondary negative effect of certain aspects of the intensification of large-scale farming. Secondary compaction, particularly of the intermediate horizon, is caused by the movement of the heavy machinery (tractors, combines, trucks and tank trucks) that has been developed as types of ever-greater capacity and of ever-heavier weight. (During the past 30 years, the weight of a tractor has increased by 68 percent; and the weight of other hauling equipment, by as much as 200 percent.)

The production technology demands an excessive number of trips. (In the cultivation of sugar beets, for example, 225 percent of the area is traveled over.) Operations that do not require travel on the surface of the soil (for example, aerial operations) are not being used extensively. There is also a shortage of low-pressure tires, although double wheels are of considerable help.

Secondary compaction is influenced indirectly by large doses of manufactured fertilizer, and by a shortage of stable manure. The latter is again the undesirable effect of concentrating livestock production, and of introducing technologies of keep that eliminate straw bedding. The consequences of compaction then manifest themselves in the tendency of the soil to become waterlogged, which of course has further serious consequences in meeting the schedules of agrotechnical operations, etc., in the increased soil resistance to plowing, and the worsening of the soil's workability.

The effect of soil compaction is especially noticeable in the case of intensive crops--sugar beets, for example--that require loose soil to a considerable depth. Hence the stagnation of sugar-beet yields in recent years has been attributed, among other things, also to soil compaction. Of course, we must not blame soil compaction for everything, and we have at present considerable reserves in the production of sugar beets. For example, the JZD [unified agricultural cooperative] in Plazy, Mlada Boleslav Okres, reports

that its average sugar-beet yield has declined by 20 to 25 percent in recent years, and the same phenomenon is encountered in other regions, in the Jicin, Hradec and Prostejov areas and elsewhere.

The theoretical essence of soil compaction is the destruction of the soil's structure and texture, which worsens the soil's permeability and biological activity, and also plant nutrition. Scientists have determined the critical limits of basic soil properties that characterize harmful compaction of the soil or soil horizon.

There are basic preventive and remedial measures. Prevention involves primarily limiting traffic on the soil's surface, especially when the soil is wet, using lighter tractors and double wheels, restricting hauling in the fields, supplying sufficient organic manure, and observing the proper planting procedures and agrotechnical principles.

Remedial measures that eliminate the consequences of soil compaction, in the intermediate horizon or subsoil, consist of a set of soil-improvement interventions of a mechanical nature. These include subsurface plowing, chiseling (loosening the intermediate horizon to a depth of 0.45 meter), and subsoiling (loosening the intermediate horizon and subsoil to a depth of 0.7 to 0.8 meter). While any farm machine shop is able to convert a regular plow into a subsurface plow, all the other machinery for soil improvement is manufactured. The chisels are produced by the Okrinek Machine Tractor Station; and the subsoilers, by the Frydek-Mistek Machine Tractor Station. In addition, we have imported several vibrating scarifiers from Hungary, and occasionally other types also are available, either from import or built do-it-yourself.

Selection of the technology and machinery is not arbitrary, but depends on the type of soil and compaction, the depth of the compacted horizons, and other circumstances. Decisive for the operation itself is the suitable moisture content of the soil. It must be neither too wet (plastic or even slushy) nor too dry--it must be friable along the entire depth that is being loosened.

The effect of loosening the soil manifests itself in the soil's improved permeability to water, so that the puddles that typically form after a rain on fields exposed to heavy traffic will disappear. This property is used to improve the functioning of systematic drainage under compacted soils (drainage with subsoil shattering). However, loosening the soil also increases the accumulation of water in the soil. On the one hand this enhances the utilization of moisture (it does not evaporate so rapidly, and does not run off). On the other hand, however, it can delay the drying out of the soil profile and thus the commencement of work in the fields. And that would not be desirable. Therefore the choice of the technology and subsequent measures is very important, and the planner must take into account in his proposal also the hydrological aspect of the intervention. In other words, would there be a surplus or shortage of water. For such soil-improvement measures the Research Institute of Soil Improvement in Prague-Zbraslav has issued methodological guidelines; and, on the occasion of a seminar on this subject, the House of Technology in Ceske Budejovice issued a collection of methodological instructions.

By no means the least important effect of loosening the soil is that the soil's resistance to tillage, particularly the plowing resistance, is reduced,

and also the average yields are higher. For sugar beets, potatoes, corn, and even for wheat and forage crops. Assuming average seeding, a 10-percent increase of the gross harvest can be expected, and even more in the case of individual crops. For example, the Prague-West State Farm reports that its average sugar-beet yield increased by 6.27 tons per hectare.

A shortcoming of the present technologies is their relatively short service life of 3 or 4 years. Therefore research is concentrating on innovations that could make these technologies more effective and lengthen their service life. The innovations concern improvements in the design of the machinery and of the soil-loosening bars, and in the technologies themselves: simultaneous application of soil conditioners and the combination of soil loosening with the application of so-called stabilizers and stimulators. These include chemical substances (structure-forming materials and lime), physical properties (magnetism), and phytotechnical measures (crops that improve the soil, green fertilizers, and modification of the seeding procedure). Special mention should be made of the efforts to introduce comprehensive measures. These are reflected in a so-called comprehensive soil-improvement system that would include prevention as well as an entire set of remedial, stabilization and stimulation measures and thereby would contribute more effectively and--most importantly--more permanently toward improving the fertility of soil impaired or threatened by compaction.

The acreage of compacted soil has not been determined accurately as yet, but on the basis of the experience in the most affected okreses (Jicin, Hradec Kralove, Pardubice, Mlada Boleslav, Rakovnik, Prague-West, Litomerice, Kromeriz, Prostejov, and elsewhere) it is estimated at 5.5 million hectares in the Czech Socialist Republic. This estimate could be refined by using the documentation obtained in the course of land valuation. This documentation should become the primary source for drafting okres master plans for the improvement of compacted soils. The agricultural organizations in each okres should join forces for the realization of such master plans in the form of comprehensive soil-improvement systems, as this is already being done successfully in some of the okreses (for example, the comprehensive efficiency brigades at the Lustenice Agrochemical Enterprise, the Dubenec JZD, and elsewhere).

Some difficulty still exist in determining exactly the degree of compaction in the fields, which is necessary for selecting the proper soil-improvement technology and also for reasons of economy, because the area of compaction is not necessarily contiguous, and thus it is possible to treat only the actually compacted strips and only to the necessary depth. In spite of certain partial shortcomings, a suitable and expedient method is penetrometry that measures soil resistance (the pressure in pascals) as a function of the measuring needle's (or cone's) penetration.

1014
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CZECHOSLOVAKIA

IMPORTANCE OF SOIL IRRIGATION DISCUSSED

Bratislava ROLNICKE NOVINY in Slovak 5 Jul 83 p 3

[Article by Milan Velko: "Lifegiving Source"]

[Text] A heavy storm has passed over the Danubian Lowland. Actually the entire southwestern tip of the Carpathian Mountains was irrigating its parched fields through the night. Although in some places the rain disrupted the continuity of the starting harvest, farmers were pleased. Indeed, grains were "burning" in many places, and other crops were literally yearning for moisture.

Eng Ladislav Pisch, chairman of the Modry Dunaj JRD [united agricultural cooperative] in Samorin, said: "But in our place we have been irrigating the crops since early morning. The rain was far from adequate to compensate for the humidity deficit. Six pumps were in full operation at the center in Mliecna. Each day they irrigated 27 hectares with 40 millimeters of water." Eng Dusan Zatko, special production agronomist, convinced us that even that was not enough. Soil with a high calcium content would need about 100 millimeters of water. Just like at Mliecna, the pumping station at Samorin is in operation continuously. The crops which need the largest amount of water these days are alfalfa, corn, sugar beet, vegetables and vineyards.

Two sets of Fregats worked on 150 hectares of the Pipadul tract. Corn of the Pioneer variety has for a number of years been giving them an average of 8 tons of grains per hectare, but regular irrigation in June and July will increase the crops by as much as 2 tons. And so it will pay off to give adequate attention to this limiting factor. The Samorin JRD has as much as 750 hectares of crops under irrigation. Therefore, just as in other enterprises, 1 koruna of outlays will bring here 3 to 5 korunas of profit.

"Profitability is really very interesting. For those who hesitate taking a pen in their hand and counting, I recommend that they do so." Those were the words of Eng Vincent Cislak, CSC, director of the Research Institute for Irrigation Management. Research studies conducted over a number of years have confirmed that irrigated barley has a yield of 1.5 tons more per hectare, fodder as much as 3 tons more in the form of hay, sugar beet as much as 10 tons more than from land which has not been irrigated.

In most agricultural enterprises, the soil is oversaturated with nutrients, particularly chemicals. It is precisely irrigation by which one can increase the crops more effectively than by using industrial fertilizers. It is known that the amount of our soil is small. The SSR has only 0.30 hectare of arable land per capita of population. Therefore, even though we protect it consistently, we should learn how to improve it and utilize it. By dosimetric irrigation, we can obtain as much as two crops per year. That applies above all to perennial fodder and intermediate crops. However, the VUZH [Research Institute of Agricultural Economy] is conducting successful experiments concerning cultivation of two crops of potatoes per year. This intensification factor can improve the fodder base, provide a good foundation for a gradual increase of the utility value of farm animals. And so, as it was pointed out by Eng V. Cislak, CSC, irrigation today is actually an organic component of agricultural production.

The Time and Amount of Water Is to Be Determined

However, it is a very complex intensification factor, which is demanding in terms of time and the amount of water supplied to the soil. Which means that, above all, an agronomist must know when and how to irrigate a given cultivation. For example, two-phase irrigation is useful for grains. The soil has to be irrigated well in the fall, so that each grain may have a suitable bed and germinate. After that, in the spring, nobody should wait anywhere just for rain. In April and May of this year, precipitation was only average, and that should be a signal to irrigate. Wheats and alfalfas in the West Slovakia Kraj needed two irrigations, sugar beet one. However, according to specialists, in May wheat should have been irrigated in the Central Slovakia Kraj, too. Corn also needs moisture, it reacts very intensively to it.

Experiments conducted by the VUZH confirm that the crops of corn grains did not drop below 9 tons, and peak crops reach as much as 13 tons of high-quality grains per hectare. And that is a 10-year average! The Sala JRD managed to grow on more than 1,000 hectares over 10 tons of crops, in Ostrov near Piestany they usually have 10 tons of corn grains per hectare in intensively irrigated areas. In Lehnice, where the soil contains an extremely high amount of gravel, they are getting crops of 8 to 10 tons of corn grains thanks to irrigation.

Central Irrigation Dispatch Office

This and other enterprises belong to a group of 11 verification centers which conduct a complex system of management on a contractual basis, under the patronage of the VUZH. The results obtained so far in the last 3 years indicate clearly the advantages of irrigation. Specialists from this research institute also provide methodological assistance to the OPS (District Labor Center), particularly with regard to irrigation. The central dispatch office of the irrigation system is a welcome novelty. By using computers, they determine the moisture of the soil in individual districts, and immediately send signals indicating how much to irrigate from the viewpoint of the entire district. As a matter of fact, in 20 selected enterprises of West Slovakia Kraj, they have worked out such signalization down to individual tracts!

And what do the specialists advise for the present? Well, apart from grains, which are now ripening, harvesting is in progress in many places. However, it is appropriate to irrigate practically all crops. Particularly the crops mentioned previously, corn, sugar beet and grass. Right now we should think about irrigation of stubble-field mixtures of fodder and intermediate crops of the cabbage type. Let us mention again corn, which requires moisture especially before blooming. But these are rather tall plants, and farmers are reluctant to enter such areas with belt-type irrigating machines for fear that they may damage the crops. On the other hand, experience shows that the losses caused this way amount to only 2-3 percent, but the crops can be increased as much as 30 percent! In other words, we have to get over some kind of a psychological shock and figure out the effectiveness of this agrotechnical intervention in the vegetative process.

Unjustified Differences

In terms of the extent of our irrigation facilities, we hold an average place among European countries. We have been outdistanced especially in recent years by the USSR, Rumania, Bulgaria. Irrigation facilities have been completed at present in the CSSR to cover 330,000 hectares of land. Most of it, 220,000 hectares, is in Slovakia, 80 percent of that in West Slovakia Kraj. That is natural. West Slovakia with the Žitny Island, the Trnava Plateau, the Danubian Lowland, Zahori and other zones, is described as our granary, as the biggest producer of corn, sugar beet, fruits and vegetables. But these and other crops require systematic humidity. One of the reasons for this is the fact that considerable areas are sandy, rapidly discharge humidity, and dry out.

Under the Seventh 5-Year Plan, each year about 120,000 hectares are added to the areas under irrigation systems. According to research and practical requirements, this rate is adequate for our circumstances. Prognoses indicate that, in West Slovakia Kraj alone, almost one-half million hectares of land will gradually be irrigated. All this requires tremendous financial outlays. The present value which the state has invested in irrigation facilities in the SSR amounts to more than Kcs 4 billion according to information from the State Melioration Administration! At the same time, it is known that irrigation is used at the rate of only 60 percent. Last year, irrigation was used in West Slovakia Kraj more than 90 percent, in Central Slovakia Kraj 73 percent, and in East Slovakia Kraj only 43 percent. At the same time, according to analyses of the VUZH, there are considerable differences in the use of irrigation between individual districts.

Last year and at present, one of the best districts has been Galanta, where according to Eng Michal Santa from the VUZH they have worked out a scientific program indicating 100 percent irrigation. In this district, there are 1,084 cubic meters of irrigation water per hectare, and in the Bratislava-Rural District, which holds second place in West Slovakia Kraj, the figure is 954 cubic meters. Attempts are also being made to use this intensification factor in the districts of Lomarno, Dunajska Streda, Nove Zamky. But one cannot say the same about the other districts. In Galanta District, the farmers got efficient Soviet Fregates and belt irrigators. A special commission evaluates the structure of the crops, holds operational consultations, and economic incentives are also

not negligible. The purpose is to apply the Galanta approach everywhere and not to let irrigation be used only incidentally, unprofessionally.

But here again we face the problem of professional handling of expensive installations, of planned intervention in the growing process of plants. In the view of experts from the VUZH, this will require more consistent preparation, training of irrigation experts in advanced schools, and schooling of technicians and machinists. So far, JRD and SM [State Farms] have only self-taught persons, volunteers, or amateurs. In some places, the management of the enterprise simply makes assignments regardless whether the people are qualified to handle the complex process. Methodological assistance is needed in this case, but that is no substitute for daily operational decisionmaking to determine which tract should be irrigated and how much water should be used.

The Present Status and Future Prospects of the Technology

Only some 10 years ago, portable irrigation systems of the pipe type were predominant in agricultural enterprises. They required a very great amount of physical labor, and the breakdown rate was high. The systems were frequently damaged. At present, the SSR alone has more than 6,000 efficient belt irrigators. These are supplemented substantially by dozens of Soviet systems of Fregates, the number of which is increasing steadily. As we were told by VUZH Director Cislak, our experts were the first ones in the world to develop the belt irrigator. That institute has also developed a new type of a turbine irrigator, which is gradually replacing the present hydromotor irrigator, depending on production capacity. The turbine irrigator eliminates completely waste water and therefore also the presence of excessive water.

Eng Cislak, said: "A new type 90 is on the horizon, but our present type 75 has world level parameters. Acting in cooperation with Sigma Olomouc and other enterprises, the institute is planning new production of water hoses. That will save precious foreign currency used for hoses which have thus far been imported. Automation of irrigation offers good prospects. Tests are being conducted for a sensor system, according to which the irrigation sets would monitor plant growth without disturbing their growth in any way."

In addition to belt irrigators, we also have at our disposal spray irrigators from Hungary, which are used, for example, in Samorin to irrigate 150 hectares of vineyards. But a new Sigma enterprise in Nove Zamky is working now intensively on our own spray irrigators, which will be welcome not only by wine producers, but also by vegetable and fruit growers.

International Cooperation

The complex process of scientific irrigation has necessarily brought about an exchange of experience within the framework of international socialist integration and cooperation. Tasks are being handled jointly within the framework of CEMA. Our Research Institute for Irrigation Economy is cooperating closely with the Research Institute of Cybernetics and Melioration of the Gruzinian SSR. Working jointly with research workers at Chersone, they deal with the complex

technology of corn growing involving the use of intensive irrigation. Exchange of experience with Rumanian and Hungarian experts on water utilization is also useful.

In our country, for example, at Vysoka on the Uh River and at Velke Levary, experiments are being conducted involving irrigation with underground water. It is mainly a question of getting water for pipes laid in the ground, and also a question as to the zones in which the pipes should be laid, so that the moisture would permeate from the pipes into continuous wide zones. In other words, all plants in a given area should get the same amount of underground water. Our experience will also be used in other CEMA countries.

Harvesting is now in full swing in the fields with summer crops. However, corn, sugar beet, vegetables, vineyards, and perennial fodder plants are awaiting lifegiving moisture. Let us make sure that this lifegiving source never dries up, and multiplies the variety of farm products on our common table.

5668
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CZECHOSLOVAKIA

AGRICULTURAL SOIL CONSERVATION, PRESERVATION URGED

Bratislava PRAVDA in Slovak 1 Jul 83 pp 1, 2

[Unsigned article: "The Soil Which Feeds Us Must Be Protected and Made more Fertile"]

[Text] The ninth meeting of the Slovak National Council [SNR] continued last night by discussing problems which are exceptionally important from the social viewpoint. It discussed a report of the SSR Government on the fulfillment of the long-term concept of development, protection, reclamation, and exploitation of agricultural land resources in the SSR. Yesterday's session of the SNR was opened and conducted by Viliam Salgovic, member of the Presidium of the CPSL Central Committee and SNR chairman. The session was attended by Jozef Lenart, member of the Presidium of the CPCZ Central Committee and first secretary of the CPSL Central Committee, and by other members of the Presidium and Secretariat of the CPSL Central Committee, vice chairmen and members of the SSR Government.

Jan Janovic, SSR minister of agriculture and food, who introduced the discussion of these problems, stressed the fact that according to data from the United Nations the prices of foods and agricultural products on the world market have trebled in the last 10 years, while the prices of finished products, with which we pay for imports of raw materials and foods, have increased 2.7 times. At the same time, the conditions of credit and discriminatory measures of all kinds have become exceptionally acute. Minister Janovic said: "The realities of the world of today confirm fully that for basic political and economic-strategic reasons we must accelerate our process of reaching greater self-sufficiency and actual independence of imports of foods, particularly grains, and also other basic needs for the nutrition of the population, from nonsocialist states, as was emphasized repeatedly and with a greater sense of urgency by the 16th CPCZ Congress."

In the Light of Prognoses

According to a demographic prognosis, the population of the SSR should increase by approximately 630,000 in the years of 1980 to 2000. If we could manage to

maintain the present acreage of arable land, although we know that those more than 600,000 people will also live and work within the territory of this country, in the year of 2000 there will be only 26 areas of arable land per capita population, which means one-sixth less than today. Furthermore, this acreage will have to provide sources for nutrition of an even higher quality than we have today, and at the same time there are no prospects for any clear increase of industrial fertilizers and agricultural chemicals, or for any sudden revolutionary advances in the fertility potential of the soil. Minister Janovic noted: "This only emphasizes the fact the soil cannot be substituted for or be replaced by other production factors, that it is absolutely necessary to take purposeful technical and biological steps designed to increase the fertility of the soil and to bring about a truly rational exploitation of every area of productive soil." He stated that the long-lasting process of gradual decrease of the amount of agricultural land in Slovakia has stopped. For the first time during the entire postwar period, the acreage of arable land increased in 1981 by 354 hectares. Last year, the increase amounted to 1,376 hectares of agricultural land and 1,940 hectares of arable land, thanks to a more consistent implementation of legal measures, proclamation of a moratorium, and also restitution of land which had been incorrectly allocated to the forestry land resources. More intensive steps were taken to exploit uncultivated land as well as land which cannot be tilled on a large scale. Owners of small garden plots and breeders of poultry and animals on a small scale are playing a positive role in that respect. Minister Janovic also evaluated positively the process of reclamation of agricultural land resources. Within the framework of this program, during the years of the Sixth 5-Year Plan Slovakia has put in use 47,000 hectares of irrigated land, 87,000 hectares of drained land, built water reservoirs with a capacity of 10 million cubic meters, and regulated almost 500 kilometers of watercourses used in agriculture. The process of soil reclamation continues under the Seventh 5-Year Plan. A total of Kcs 10 billion have been invested in that area in the 7 years since the concept had been approved.

Problems Continue

In spite of these and other positive results, considerable problems remain in the area of protection and melioration of agricultural land resources. Errors due to an inconsistent comparison of the physical inventory with records of agricultural land resources are slowly being eliminated. Efforts to oppose the claims of investors who try to use land of the highest quality are not always successful, just as in the past. There are cases of unauthorized entries on cultivated land. Construction programs involving the use of land of lower quality, where, on the other hand, investment requirements are more demanding, are not always carried out consistently. There continues to be a lack of innovated technical-economic indices designed to make it more advantageous to do construction work in meadowland, on slopes, to build high-rise buildings, to build underground, and so on. In many JRDs [united agricultural cooperatives] and SM [state farms], farms were being established and farm buildings constructed on unnecessarily large areas. Minister Janovic said: "That land is now covered with weeds and is not cultivated. I am now asking agricultural management organs, functionaries of agricultural enterprises, national committees, to act in the spirit of the appeal made by the ministers of

agriculture and food and of interior and to use such areas for growing vegetables, fruits, fodder, and other crops which are in short supply, and to do that through members of cooperatives, state farm workers, and possibly also through owners of garden plots and breeders of animals on a small scale." Similar shortcomings in the use of land resources also continue in the areas of manufacturing establishments and their surrounding areas. He also talked about frequent pressures to authorize exceptions from the provisions of the law on protection of agricultural land resources, and about the need for a fundamental change in the approach of all those who evaluate the use of agricultural land for nonagricultural purposes, starting with project engineers and investors, who usually evaluate the soil from the viewpoint of the cost effectiveness of the construction and not from the viewpoint of the need to preserve the land for further agricultural use. Unsuccessful efforts have been made to continue enforcing the programs of rebuilding the historical centers of cities to the detriment of large suburban areas. The construction and reconstruction of the network of roadways, extraction of gravel and sand also require that large areas of agricultural land be taken out of use for agricultural purposes.

Ways Out

Minister Janovic continued: "What we have done so far to protect and reclaim agricultural land resources is hardly enough for today. It is very little for future generations. We cannot passively accept prognostic considerations about the decline of the acreage of arable land per capita of population by the year of 2000. We must strive to absolutely increase agricultural land, especially arable land, that is our obligation with regard to the future generations. The government is asking the SNR to support such a state policy during the forthcoming period in providing for the food program:

"--to continue the policy of a moratorium and prohibition of using land of the highest quality for other than agricultural purposes;

"--to reevaluate from the viewpoint of food priority the justification of limiting intensive exploitation of land resources in protected territories;

"--to mobilize for agricultural use land reserves from nonagricultural land resources which are managed by other departments as the main source for expanding agricultural and arable land."

Minister Janovic continued by saying: "We want to substantially increase our knowledge of soil and of the biological laws of nature. We will do everything to make sure that any intervention in soil resources is based on the biological project of the region, the theses of which are being gradually worked out by scientific teams in the territory of the entire SSR." He also gave the information that scientific institutes of the SAV [Slovak Academy of Sciences] are being given the assignment of reevaluating the present use of agricultural land resources and carrying out more precisely the zoning of the territory from the viewpoint of the most rational exploitation of the land for food production. The Department of Agriculture welcomes the proposal of the Czechoslovak

Agricultural Academy to set up a land service above the departmental level, or a "Government Committee for Agricultural Land Resources," and a "State Inspectorate for Protection of Land." He characterized the content of the complex land reclamation program, the expected expansion of irrigation, and interventions of a noninvestment nature, namely agricultural melioration measures. All this will require up to the year of 2000 more than Kcs 18 billion for noninvestment land reclamation, and almost 22 billion for investment reclamation of agricultural land. In closing his address, Minister Janovic said: "We have no other way out, no other opportunities, except to continue intensifying agricultural production more energetically by using the method of full exploitation of agricultural land resources and of the materialized, tangible inputs of scientific and technical progress. Nobody will relieve us from the planned vegetable and animal production. In a place where, figuratively speaking, one ear of grain grew during the period before the war (now there are 2.5 of them), we must obtain by the year of 2000 three to five times as much. That is a realistic goal, but only on the assumption that the society will make exceptionally large investments in the area of biology, chemistry, and technology, in the interest of--and I underline this--protection and reclamation of agricultural land resources."

Continued Permissiveness

Deputy Jozef Gala, collective reporter of SNR committees, pointed out how much attention the SNR paid to the problems of protection and reclamation of land in the past in general and to the preparation of the current session in particular. Deputies used the findings of their group and individual research programs in deliberations of the committees. These deliberations were factual, critical and constructive. They were characterized by high attendance of the deputies in the discussions. The deputies made valuable presentations and observations, tending to improve the situation in this area. Research studies and deliberations of the committees led to the finding that there was a certain permissiveness and inconsistency in the implementation of the legal measures by the organs of protection of the agricultural land resources, starting with the SSR Ministry of Agriculture and Food and continuing through KNV [Kraj National Committees] and ONV [District National Committees]. The Committee on Constitutional Law of the SNR stated in its resolution that legal norms regulate adequately from the legislative viewpoint the protection of agricultural land resources, but the key problem consists in the shortcomings of their application in practice. SNR committees essentially agreed that even the existing economic instruments for protection of agricultural land resources did not influence adequately project engineers and investors to make sure that less valuable land consisting of slopes was taken over for investment construction. Agricultural enterprises hold their share of responsibility for the rapid decrease of acreage of agricultural land, because their records are in disorder, because of their efforts to get rid of less fertile land, because of arbitrary changes in the types of plants grown on the land, because of enclaves left uncultivated and unused. Deputy Gala demanded the following: "Land must be protected effectively and delivered to the next generation at least in the condition in which we have taken it over, if not in better condition." He stressed the need for complex implementation of the reclamation

process, more consistent enforcement of obligations assumed by investors in substitute recultivations of land, and he expressed his support of measures taken by the SSR Government for protection, reclamation, and exploitation of land.

Deputy Helena Galla mentioned several findings gained from the management of land in Nove Zamky District, Deputy Peter Zerdahelyt stressed the importance of education for responsible handling of agricultural land resources. Deputy Helena Mihaleckova stated that the newly drawn production program in the East Slovakia Lowland assumes a long-range increase of production as compared to the present situation: the production of grain is to be almost doubled, the production of milk and meat is to be increased 2.6 times, and so on. Deputy Kamil Brodziansky noted on the basis of negative findings in Zdiar nad Hronom District [Adiar on the Hron River] that there is a relationship between pollution of the living environment and protection of agricultural land resources. Deputy Stefan Horvath concentrated on the use of intensification factors, which serve to increase the fertility of the soil. On the basis of findings of research conducted by deputies, Deputy Jozef Pocs pointed out that it is necessary to study the condition of the parcels of land which have been temporarily reclassified and taken out of their status of agricultural land resources. He stated that in the Roznava District in some settlements there are about 46 hectares of land whose status has not been settled as yet. Deputy Anna Hasanova dealt with problems of land protection in connection with road construction, Deputy Jaroslav Gabor mentioned some findings derived from replacement of land which has been taken over by recultivated land, and Deputy Jaroslav Karas emphasized the need for better evaluation of meadows and pastures, which he illustrated by experiences gained in Liptovsky Mikulas District.

SNR Resolution

After the closing speech made by SSR Agriculture Minister Jan Janovic, the SNR unanimously adopted a resolution which describes further reclamation and intensive cultivation of land as the most significant reserve, as the production of foods keeps increasing. In order to reach this goal, it is necessary to do the following:

--Improve the performance of the state administration in such a way that the existing trend of increased protection of agricultural land resources be maintained and intensified. In handling complex and individual housing construction, it is necessary to use more consistently unused areas within the limits of cities and communities, reevaluate executory regulations concerning the process of takeover and restoration of land to agricultural production for purposes of building long-distance power lines, engineering networks and other constructions. It is necessary to solve economic problems resulting from the use of less suitable land for investment construction.

--In the reclamation process, it is necessary to continue in a complex manner according to individual areas, and to take in consideration the ecology of the territory.

--Within the framework of facilities of the national economy, priority must be given to the financial and material needs for purposes of investment and noninvestment reclamation of soil, with special attention to soil reclamation in the East Slovakia Lowland, Zahori, the watershed of the Ipla and Hron rivers, and permanent grasslands.

--In the area of political and educational activities concerning the masses of the people, it is necessary to strengthen among the citizens and especially among the youth a self-aware attitude to the land, which is considered to be one of the main components of the living environment and which provides food for the nation.

The SNR expressed its support of the SSR Government which continues its policy of a moratorium and prohibition of taking over land of the highest quality for other than agricultural purposes, implementation of measures designed to increase the acreage of agricultural and arable land, organization and proclamation of the nationwide movement called "For Beautification of the Living Environment and Character of the Countryside."

With approval of proposals concerning election and recall of judges active in SSR courts, and with acknowledgment and approval of the report of the SNR chairman concerning the activity of the SNR Presidium since the eighth SNR meeting, the program of the ninth meeting of the SNR was completed.

From the SNR Presidium

As announced by the CTK [Czechoslovak News Agency], the SNR Presidium discussed yesterday at its 25th meeting a report from group research by deputies of the SNR concerning implementation of the tasks of central organs of the SSR state administration and national committees, which dealt with the question of creating favorable conditions in the construction and operation of nuclear electric power plants in Jaslovske Bohunice. The Presidium also discussed a report on the activity of the SNR Committee for National Committees and Nationalities, with an outlook up to the end of the electoral period. According to Article 111, Section 3 of Constitutional Law No 143/1968 of the Codex on the Czechoslovak federation, the SNR Presidium promulgated an SNR law, which changes and amends Law No 39/1957 of the Codex on areas producing hops, location of hop gardens, obligatory trademarking of hops, and registration of hop gardens within the meaning of the legal measure of the Presidium of the National Assembly No 77/1962 of the Codex.

In conclusion, acting on the basis of Section 50, Para 1 of the SNR Law No 56/1971 of the Codex concerning elections to national committees in SSR, the SNR Presidium announced by-elections to the East Slovakia KNV in electoral districts No 17 and 25 with seat in Kosice-City, No 65 with seat in Presov, and No 108 with seat in Trebisov. It ordered the elections to be held on Saturday, 17 September 1983. According to Article 104, Para 2 of Constitutional Law No 143/1968 of the Codex on the Czechoslovak federation within the meaning of Constitutional Law No 125/1970 of the Codex, the SNR Presidium declared the spring session of the SNR closed effective 30 June 1983.

Care for Agricultural Land Resources

Viliam Salgovic, member of the Presidium of the CPSL Central Committee and chairman of the SNR, met yesterday in Bratislava with representatives of the SSR Ministry of Agriculture and Food, headed by its minister, Jan Janovic. He appreciated the efforts they made to prepare the ninth meeting of the SNR, which discussed, among other things a report on the fulfillment of the long-term concept of the development, protection, reclamation and exploitation of agricultural land resources in the SSR. He noted that in particular workers of agricultural enterprises, research institutes and other departmental organizations must strive to make sure that the resolution passed at the SNR session be carried out consistently, and that care for agricultural land resources become one of the foremost duties of every member of our socialist society. The meeting was attended by Elena Litvajova, member of the Presidium of the CPSL Central Committee and vice chairwoman of the Central Committee of the SZZ [Union of Agricultural Workers]; Bohus Travnicek, member of the Secretariat of the CPSL Central Committee; Matus Benyo, vice chairman of the SNR; and Jan Gregor, vice chairman of the SSR Government.

5668
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CZECHOSLOVAKIA

ALL GASSES, FLAMELESS 'RADIATION' 400 KW BOILER DISCUSSED

Prague ZEMEDELSKE NOVINY in Czech 7 Jul 83 p 1, 2

[Article by Jan Subert: "Czechs From Eastern Bohemia Proved that the 'Magic Boiler' Is not a Fantasy; They Call It 'Golem'"]

[Text] They call it Golem and it is the joint project of two inventors from Prague and farmers and gas workers from Eastern Bohemia. It was the highlight at the recent exhibition of agricultural inventions and innovations in Chrudim. No wonder. No one has ever seen a boiler with no flame inside, with a power output of 400 kW and a weight of only 400 kg, whose technical parameters exceed everything which has been produced in this area in the world. Furthermore, it was introduced at a time when nobody expected it really to appear any longer. The interest, which the first information about its existence aroused, changed into distrust, this "doubtful device" was rejected and nobody took it seriously any longer.

It was more than 2 years ago, but some of our readers may still remember. The article was entitled "A Magic Boiler," it appeared on the first page of this newspaper on 22 November 1980 and provoked an exchange of opposing opinions. The device, introduced in this article, did not fit among classical concepts and only a few were willing to believe. The manufacturers of traditional gas boilers considered it too much work to investigate further. It was much more comfortable to stick to traditional familiar ways and to declare that any attempt to apply the invention by engineers Mach and Dusek in practice was deemed to failure. Months passed and the "magic boiler" was forgotten. Only a few people knew that in the meantime, farmers and gas workers from Eastern Bohemia began to work quietly on the invention together with the inventors.

Let us return to the content of the article, published more than 2 years ago and review the information, which once aroused unusual attention.

Everything began in the mid-fifties, when specialists from the Iron Ore Mines Research Institute in Mnisek pod Brdy tried to master the process of so-called flameless combustion. The work developed successfully and at the beginning of the seventies, the first prototypes of flameless boilers of the first generation were manufactured abroad with our substantial assistance. At the same time, however, serious problems began to arise and accumulate, preventing further development. In 1975, the technical problems reached their peak, they were pronounced insoluble and the fate of flameless gas boilers was decided and its further development terminated.

The First Prototype in 1977

Fortunately, the fate of the new combustion process was not ultimately decided. The year 1975 was also a time when the two, now very well-known, inventors appeared on the scene. Hundreds of evenings followed, endless discussions, thousands of drawings and calculations. Not even 18 months passed and engineers Jan Mach and Josef Dusek, Candidate of Science, of the Iron Metallurgy Research Institute announced that they had solved the "insoluble."

The first prototype of a gas boiler, in which water is not heated by flame but by intensive radiation, was born in 1977 in the Sectorial Mechanization Plant of the Metallurgical Secondary Production Enterprise in Nymburk. Its "premiere" demonstration took place a year later in the Research Institute of Welding in Bratislava with very encouraging results. The challenge procedure by the Inventions and Discoveries Office was also successful: the mastering and application of the entirely new way of energy transformation--the so-called contact kinetic principle--was declared a significant invention. Engineers Dusek and Mach received the authorship certificate.

The Inventions and Discoveries Office also published a technological and economic evaluation of the newly developed device. The evaluation emphasized as especially attractive the following features: the reduction of the boiler's weight by as much as five times, the more than 90 percent efficiency, the potential for using all types of heating gases and the possibility of decreasing the amount of water to one-twentieth of the volume used in present boilers. The authors extended this list with further favorable features: the "radiation" boiler is ideal for burning biogas; the water flowing into radiators reaches the determined temperature after only 5 minutes; the boiler does not require a special room, it can be installed in a corner and it will relieve the management of office buildings, schools or apartment houses of many worries concerning heating.

Nobody Wanted to Believe

We published all this information in 1980. We also added the responses of the manufacturers, to whom engineers Dusek and Mach offered the results of their efforts. The largest boiler manufacturer, CKD Dukla Prague, advised us that they did not have the conditions necessary for the

manufacture of prototypes, which would have to precede the manufacture of large series. Elektrosvit in Nove Zamky wrote us that they preferred foreign licenses and other enterprises expressed similar opinions. The only hope seemed to be Slatina Enterprise in Brno, but this hope proved to be vain as well. We even got the "magic boiler" case on television and we waited together with the inventors, as to whether an enterprise could be found which would be willing to help.

The response to the newspaper and television introduction of the "magic boiler," which had been standing deserted and covered with dust in a corner of the Sectorial Mechanization Plants in Nymburk for more than a year, was considerable. However, during the first specific negotiations the initial optimism suddenly disappeared. At many places the opinion prevailed that the invention was a mere curiosity and that every attempt to apply it in practice was necessarily doomed to failure. The attempts of our editorial staff to push the "radiation" boiler through was labeled as an entertaining story, according to which we had become victims of a hoax and the surface "rippled" by interest was followed again by motionless waters of indifference and silence. Only the Ronov nad Doubravou JZD [Unified Agricultural Cooperative]--strictly speaking its branch of the Czechoslovak Scientific and Technical Society--and the District Agricultural Administration in Chrudim did not share the unjustified distrust.

The Impulse Came From the Ronov JZD

"The first impulse came from the Ronov nad Doubravou JZD several years ago, from investment technologist Vladislav Krajina," recalls Josef Venhart, energy engineer of the District Agricultural Administration in Chrudim, and goes on : "He came to use and convinced us. The idea of successfully burning biogas, which burns badly in regular boilers, was attractive from the very beginning. Although we were concerned at first as to who would pay for further work on the invention, this problem was quickly solved. Other three cooperative farms joined Ronov JZD and thus financial means were soon gathered. The East Behemia Gasworks in Rosice also helped and together we all created a complete rationalization brigade. The distance separating us from the promising goal began to shorten quickly."

A prototype of the radiation boiler, which the Ronov farmers appropriately began to call Golem, was publicly introduced for the first time at the end of May this year at the exhibition of agricultural inventions and innovations in Chrudim. The public will see it again soon, at the end of August, at the "Nourishing Land" exhibition in Ceske Budejovice. The boiler's power output reaches 400 kW--to give a lay person some idea about how much it is: for example, it would be sufficient to heat 20 family homes. Its weight is 400 kg, efficiency 91 to 94 percent, the water volume is 75 liters and the operational temperature is reached in 3 to 5 minutes. Let us compare it with the parameters of a modern gas boiler of the same power output manufactured at Slatina Brno, national enterprise: the power output is 392 kW, weight is 1,730 kg, efficiency 88 percent, water content 1,370 liters--no further comment is necessary.

Vladimir Krajina, Ronov JZD: "From the very moment when ZEMEDELSKE NOVINY reported on the invention of the radiation boiler, it was clear to me that it is worth trying. It was not easy. It took all weekends and vacations. Much work has been done with the help of the Czechoslovak Scientific Technical Society, also gas workers from Rosice helped a lot. However, now we can responsibly claim that we achieved practical application of a top invention of world significance."

Present Direction: Manufacture

It follows from the information presented at the exhibition in Chrudim that Golem, the biogas-burning boiler, can be used to heat apartments, administrative buildings, stables and cowsheds, poultry farms, greenhouses, drying houses and the like. Its capacity to burn all kinds of heating gases extends additionally its application to food-processing technologies--live steam preservation, sterilization and the like. The principle of flameless contact kinetic combustion can also be used to intensify industrial heating in metallurgy, mechanical engineering, chemistry and other areas.

Especially attractive to the inventors is the possibility of constructing very small, efficient boilers, which will cause a revolution in present methods of heating family homes. The manufacture of radiation boilers, using available domestic materials--another important feature--is under consideration. In its letter sent to our editorial office at the end of May, the District Service Enterprise in Ceske Budejovice expressed preliminary interest in manufacturing these boilers.

According to the director of the East Bohemia Gasworks plant in Rosice, Engineer Pavel Pejcha, it is now most important not to give up and to do everything so that the radiation boiler "grows out of its childhood pains." "Recently a testing prototype has been manufactured in our workshops and tested in our testing room, it is now necessary to prepare a prototype on a higher level. We are not indifferent to the fate of this equipment and we are willing to continue providing all assistance for its further development and facilitating its path to practical application. If everything goes well, we may consider piece production."

The branch of the Czechoslovak Scientific and Technical Society in Ronov nad Doubravou JZD, the District Agricultural Administration in Chrudim and the East Bohemia Gasworks in Rosice were not afraid to take the risk and set out on an untrdden path, thus proving that practical application of the radiation boiler definitely does not belong in the realm of dreams and fantasy. Their courage to start a journey in an unexplored direction and thus to contribute to the introduction of a progressive technical solution sharply contrasts with the alibi-seeking excuses of industrial manufacturers of gas boilers, unwilling to leave comfortable and familiar paths. Furthermore, the Metallurgic Secondary Production enterprise, which as the state-appointed administrator of the invention, is fully responsible before the law and society for its implementation and has shown extraordinary initiative in this case.

The difficult progress of this significant invention, which in its first form was born as early as in 1977, is also meaningful evidence of the current high significance of the conclusions of the recent Eighth Plenum of the CPCZ Central Committee, devoted to the urgent need to put the most recent results of research and development into use without delay.

[Caption for photo not reproduced]

A packet of cigarettes placed on the left upper part of the boiler illustrates the relation between Golem's power and size. Despite its small dimensions, its power output of 400 kW will easily suffice to heat 20 homes. Its smaller "brother," which is now being prepared for heating single homes, will have power output of 40 kW and its size will be that of a large thermos bottle.

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CZECHOSLOVAKIA

ACID RAIN THREATENING WOODED AREAS, LAKES

Bratislava ROLNICKE NOVINY in Slovak 4 Jul 83 p 3

[Article by Martin Lisal: "Detimental Effects of 'Acid Rain'--Responsible Task for Technologists in Many Sectors"]

[Text] Acid rain. Words that fill many a specialist with fear. We are not even aware of its presence, but it is all around us. Drops of water falling from dark skies not only irrigate soil in many localities, but also render it acid. Affected are primarily forests that have been maturing for many decades.

One of the specialists dealing with the problem of this detimental phenomenon is Dr Eng Eliska Novakova, CSc, from the Institute of Applied Ecology and Ecosystems in Kostelec and Cernymil lesy, who pointed out the scope of impact of acid rain--pollutants--on forested areas.

Over the past several years, we were able to detect the detimental effects of pollutant fallout in forest growths in the vicinity of factories. Acute manifestations have appeared particularly in the vicinity of such industrial complexes as the Aluminum Works of the Slovak National Uprising in Ziar and Hronom (flue ashes of fluor compounds), or in the vicinity of industrial complexes in northern Bohemia and around Ostrava. After fir growth started to die off in the vicinity of Ziar and Hronom, specialists hit upon the idea of the necessity for diluting the pollutants, reducing their concentration. And how? The suitable approach was deemed to be wider distribution which meant that there was no change in the amount of pollutants, only the extent of the impacted area changed. By adopting this measure, we eventually managed to get below the level of admissible concentration and, seemingly, we won our struggle against pollutants. As it turned out in reality, it was but seemingly. Somehow we failed to think through the consequences, in the sense that by reducing concentrations we will fail to reduce the absolute amount of pollutants. Factory stacks feed flue ash, nitrogen oxides, sulphur dioxide and other wastes into the atmosphere.

Treacherous Dispersion of Pollutants

There occurred a new situation. We did not perceive quite acutely the range of the harmful effects of these substances resulting from their increased dispersion resulting from their being released into the atmosphere through taller stacks. The solid phase--flue ash--is released in minute microparticles in the form of dry, hot components with a low electric charge. The flue ash gradually cools off, it absorbs water molecules along its path through the atmosphere, its electric charge increases, but also absorbs gases. In this manner, the minute particles of flue ash actually become minicarriers of sulphurous or sulphuric acid--aggressive substances negatively affecting the surface of plants, acidity of soils and the life in them. At this moment, the released flue ash--emitted air pollutants--discharged substances actually turn into contaminants. These substances, assuming the form of a compound, detrimentally affect living organisms. Consequently, the larger the flue dust particles, the sooner they reach the ground due to the effects of gravity and the lesser the chance for generation of acidic compounds in the atmosphere. By increasing the dispersion of emitted pollutants--flue ash--we increased the size of impacted areas in the vicinity of factories and by generation of minute particles (size 3 microns) we increased at the same time the probability of acidification of our environment. In regard to assessing the fallout of nontoxic pollutants emitted from our thermal power plants, cement mills, etc., our standards permit a total fallout of 150 tons per square kilometer annually. Thus, from the ecological viewpoint it becomes important to know which approach is more viable.

When we use lower smokestacks, the emitted pollutant particles are larger, reaching the ground still dry and warm. They cannot become enveloped by water and gas molecules. In order for a plant to absorb flue ash into its nutritive system, the ash must first be exposed to the effects of weathering. The plant's root system provides it with a strict selectivity in this respect. The plant uses its root system to select suitable components for its nutrition.

The situation is different in regard to fine particles dispersed from smokestacks. They do not reach the earth's surface in the direct vicinity of the source of pollution. These tiny granules with an average diameter of 3 microns fly for a long time through the air, air current carrying them over long distances, which affords them the possibility for cooling off and enveloping their relatively large surface with a great amount of water and gas molecules. While these finer components form a smaller part of the emitted pollutants, they are more dangerous. In a seemingly clean environment, where we do not even perceive the presence of these particles, they treacherously invade plants through their respiratory apparatus, bodies of animals through the mucous membrane and the soil through precipitation. Despite the fact that separators intercept large particles which form up to 96 percent of generated pollutants, for the time being they are still unable to intercept the finest components which pose the greatest danger to biological life.

Consequently, if we rely on tall factory smokestacks without endeavoring to intercept all particles of emitted pollutants, even the smallest of them, then we speed up environmental pollution in time and space. The drier the weather in a given period, the longer will be the path of the particles and the larger will be the space they contaminate. The degree of harm produced by such pollutants depends on the buffering capacity of the contaminated environment. If acid rain falls on a locality, let us say once in a quarter of a year, the damage is less conspicuous. The situation becomes worse in cases where the buffering capacity of the environment is inadequate for nullifying the detrimental effects of acid rain. At a point where the environment is no longer capable of resisting the detrimental effects of acid contaminants, there occurs acidification of the soil environment. Soil acidity increases to such extremes (the scale ranges from zero value to 14) that such an environment will become unable to support the growth of even coniferous forests. The latter thrive in mildly acid soils, but not the kind found, e.g., in some denuded areas in the Beskydy Mountains where by the end of the current year foresters should start with applying calcium to the first 1,000 ha [hectares] of future forested area. Calcium is indispensable for lowering soil acidity. A pH value of about 2.25-2.5 is alarming, calling for application of calcium. We are not the only ones afflicted by this state of affairs. On the contrary, it is a problem on an international scale.

Our Mountains Are Suffering

Acid rains detrimentally affect particularly areas (mountain chains) where even the substrate is aciduous. The most direly afflicted among our mountain chains at the present are the Bohemian border mountain systems-- Krusne Hory, Krkonose, Jeseniky, Sumava and many others. Most afflicted in this respect in Slovakia are the Slovak ore mountains, but substantially less afflicted is the Demanov basin in the Low Tatra Mountains with its calcium substrate. The same applies to water. Substantially more afflicted are streams that spring from peat bogs and granite mountains, as well as brooks and rivers springing from or flowing through limestones. Very sensitive to acidification of waters at present are lakes in Sumava, but even there the situation is still not quite so tragic as it is in Sweden, where as the result of a developed industry with inadequate separators of impurities there are releases of great amounts of discharged pollutants in the form of diffused particles not only in Sweden itself, but also in the surrounding regions.

More ways out are open to us at the present. One of them is to reduce or limit contamination directly at the source of pollutant emissions, or to increase the height of smokestacks and achieve a dispersion of pollutants which, however, will merely postpone catastrophe in time and space. Another possibility is to increase the tolerance of the components of nature toward pollutants. A forest's capacity for tolerance differs substantial from that of field crops. Acidity of the environment caused by sulphur dioxide can be detected very easily, however, the situation is much more difficult in detection of heavy metals found in the atmosphere, such as magnesium, lead, cadmium, mercury and others which are

toxic in larger concentrations. Their increase in volume is not the only decisive factor, it is also necessary to know what is being accomplished by their "adversaries." At points where an "adversary" is not absent, the damage is smaller, where it is absent, the damage inflicted by heavy metals becomes fully manifested. Thus, e.g., the antidote maximally decreasing the harmful effects of lead is calcium. As the contents of lead in the atmosphere increase together with the contents of calcium, damage in areas with a high concentration of exhaust gases does not become as pronounced as in areas with an acidic substrate. If we select the Tatra Mountains as an object of comparison, then Rohace with acid rock formations suffers substantially more from motor traffic than Belanske Tatry where rock formations containing calcium are amply represented.

In acute cases, the struggle against acid rains consists in application of calcium. But application of calcium is only first aid offered to forest environments. Thus, overcoming of the real cause is in the hands of technologists in factories, personnel of research institutes, institutions of higher learning and representatives of national committees. Our times call for elimination of sources of atmospheric pollution.

Every emitted pollutant is harmful, whether it escapes in the form or large or small particles, even though the smaller particles are more treacherous. In this respect, it is impossible to separate one country from another. We live on a planet enveloped by one common air space, where it is impossible to assert, to put it allegorically, that any rubbish that falls beyond our yard is of no longer of any concern to us. Regretfully, this holds true of many of the world's countries.

Extent of Pollutants Emission on the Silver Screen

The movie "Another Silent Spring" which was awarded the prize of the CSR Ministry of Forestry and Water Management at the Ekofilm 83 festival in Ostrava found its incentive for filming in the ideas of American writer Rachel Carson who 20 years ago was exhorting the world to fight against chemical pollution by pesticides. Now "The Second Silent Spring" is in the making, there is a threat of a new ecological catastrophe for much of the world. Chemical substances, primarily "acid rain," cause enormous damage. They destroy forests, lake and river waters, animals are dying, man's health is endangered. Director Bo Landin showed in this Swedish film very graphically and with specific examples to the wide public the specific measures that forestry and water management specialists have adopted in Sweden. Calcium application from aircraft and river boats, which also represents tons of fuel required for production and distribution of substances indispensable for alleviating the acidity of the environment. Such a state of affairs calls for an approach with combined forces.

An analogous treatment of these problems is offered by the Bulgarian film "For a Blue Sky," awarded the prize of the New Metallurgical Plants of Klement Gottwald, wherein pollutants from factory smokestacks, from residential housing and from automobile exhausts contaminate the atmosphere.

During temperature inversion, absence of wind and at higher concentrations of harmful combustion products, smog accumulates in cities. Herein the authors also point out that the most effective measures is a technology that produces no waste in production and combustion.

Director Josef Cisarovsky, in the Czech film "The Bombshell of Motorism" uses the city of Prague as an example to show a locality direly affected by exhaust gases from automobiles. During traffic peaks and recreational exodus from the city, and during the return of the recreationists from their weekend trip, the pollution of the atmosphere assumes critical values.

The city will gain relief from expansion of the subway network, establishment of additional park zones in its historical center, lowering of exhausted combustion products and lowering the contents of lead in gasoline.

All of us in general, and technologists of the entire world in particular, are faced with a common, responsible task--preserve an optimal environment in the interest of the coming generations.

8204
CSO: 5000/3018

CZECHOSLOVAKIA

NEED FOR MORE MEDICINAL HERBS DISCUSSED

Prague HOSPODARSKE NOVINY in Slovak 3 Jun 83 p 6

[Article by Eng Ivan Zaborsky, ScC, adjunct professor of the Agricultural College in Kosice: "More Medical Herbs Are Needed"]

[Text] The cost of drugs is going up year after year. In the SSR in was Kcs 153.44 per citizen in 1975 and in 1981 it rose to Kcs 226.74. Data obtained thus far from all over the world have convincingly shown that medicinal plants, of which about 1,000 species grow in Europe, hold a firm place in therapeutic praxis. In our health system natural medications play an important role. Our medical science is using some 150 medicinal herbs but folk medicine uses about 800 species. At present approximately 65 percent of drugs and medications are produced from medicinal plants.

Manual harvesting of wild medicinal herbs cannot satisfy the demand and therefore, it is absolutely essential to expand their mass cultivation. However, our agricultural enterprises thus far have not sufficiently availed themselves of the opportunities for the production of medicinal and aromatic plants, although our domestic production is able to replace a large amount of the raw materials we are currently importing. At present we are importing from non-socialist countries almost 20 percent of the raw materials for our pharmaceutical industry.

Our pharmaceutical industry uses 400 different vegetable components, 170 of them drugs, 73 extracts, 44 essential oils and 113 natural substances.

Medicinal plants gathered for seeds are treated the same way as grain crops. Those yielding leaves or stalks are cultivated as fodder crops or vegetables. Plants used for their roots or tubers are grown the same as potatoes or row crops. Agrimony, [lovage?], [yarrow?], common camomile, coltsfoot and other medicinal plants thrive in the SSR. Our agricultural enterprises and gardeners grow about 35 species.

The table presents the situation of the acreage cultivated with medicinal herbs in 1978-1982.

Acreage of Medicinal Herbs in 1978-1982 (in hectares)

Year	CSSR	CSR	SSR
1978	1153	816	337
1979	1179	766	413
1980	1472	999	473
1981	2378	1371	1007
1982	2128	1096	1032

The Concept of Cultivation

According to the concept approved for the development of the production of medicinal herbs, common camomile will be grown in 1985 on 440 hectares in the SSR, of which 330 hectares in the East Slovakia kraj. It will be produced on the salty lands of the East Slovakia lowlands in the Michalovce okres. The cultivation of ergot will be stabilized on an area of 1,000 hectares. Poppies will be grown on 4,500 hectares.

Economic considerations affect considerably the efficient development of every branch of production, however, until recently very few specific data about the actual level of costs, labor productivity, profitability of the production and other economic indicators were available to us in terms of cultivated medicinal herbs. Medicinal and aromatic plants are among the economically underexplored branches in our agricultural production.

The per unit production is one of the decisive indicators in intensive cultivation of medicinal herbs. However, their per hectare yields are very variable. Common camomile, one of our most widespread medicinal plants, produces, if cultivated on large areas, 800 to 1,000 kg of fresh blossoms per hectare, i.e., 160-200 kg of dry material. Due to extreme weed infestation in certain enterprises in the East Slovakia kraj in 1982, there was no harvest or only one harvest which produced very meager yields from the cultivated areas. We noted great differences between the cultivating enterprises, okreses and krajs in practically all vital medicinal herbs. The harvest of ergot ranged from 40 to 300 kg per hectare. The yields of poppy heads were in the 80 to 500 kg per hectare range.

The production efficiency indicator and the general level of intensification in this branch is expressed by the amount of gross production. Its amount in constant prices is within the limits from Kcs 4,000 to Kcs 30,000 per hectare, depending on the particular cultivated medicinal herb. The value of their per hectare gross production ranks medicinal herbs among the most intensive crops in our entire crop production. Depending on the species and quality of the final product, substantially higher market production per unit of acreage may be obtained under good weather conditions.

The Costs

Our agricultural enterprises engaged in the cultivation of medicinal herbs have not been paying necessary attention to the problems of following their

production costs, as evident mainly from the inadequate concentration of the assessed branch and the complex calculation of production costs in the cultivation of medicinal herbs and plants producing essential oils in terms of a broad spectrum of species as well as in terms of the difficulties and often enough also a lack of theoretical or practical specification of the methodology for the calculation of production costs.

According to conversions made in the research department of the Agricultural College in Kosice, the per hectare production costs for camomile in the agricultural enterprises under study amounted to Kcs 8,000-19,000, of which direct labor costs 35-70 percent of total production costs. This relatively high requirement of manual labor indicates the low standard of mechanization and total equipment in this branch. At the same time it points to the ample untapped resources to be derived by reducing manual labor and mechanizing individual work processes. No distinctive development may be expected in the cultivation of medicinal herbs without replacing manual labor by mechanized production. With the exception of medicinal herbs cultivated for blossoms, we are able to mechanize almost every operation, however, in the coming period multipurpose machinery must be either developed more expeditiously or procured more readily; additional opportunities must be sought to replace manual labor by mechanized work processes, especially in harvesting and post-harvest processing of medicinal plants.

We studied in detail the amount and structure of the material and other costs. The completed study proved that the enterprises under observation failed to make full use of such an intensifying factor as fertilization in their cultivation of medicinal plants. In this respect untapped resources exist not only in the extent of used fertilizers but also in the structure and time of their application; organic manure has also been underutilized. We observed that some enterprises had failed to avail themselves properly of their opportunities for chemical protection.

Profitability is guaranteed only with large acreage and the use of mass production technology. Net per hectare profits may amount to Kcs 5,000-20,000; the amount of profits ranged from 30 to 220 percent according to the yield, the quality of the product and the costs expended. The more advantageous the relation of the harvested products and the costs invested, the more efficient the stabilizing effect of the cultivation of medicinal herbs on the enterprise economy.

As background I used data from the cultivation of Silybum marianum in the 9th of May JZD [unified agricultural cooperative] in Nove Sady, in order to present a more accurate example of the economy of cultivated medicinal plants. The economic results of the tests conducted in pilot production are evident:

Per hectare yield	1.9 ton
Per hectare gross production	Kcs 28,500
Per hectare time consumption	66 hours
Per hectare production costs	Kcs 8,882
Per hectare net profits	Kcs 19,618
Profitability	221 percent

For the development of economically efficient and highly intensive production of medicinal herbs in the SSR, decisions directly related to the planned development of that branch must be translated more vigorously into practice. In view of our natural and socioeconomic conditions, however, precisely in the SSR the sector of medicinal herb cultivation has ample untapped resources.

9004
CSO: 2400/338

DILEMMAS POSED BY NEW INDUSTRIAL ASSOCIATIONS CONSIDERED

Warsaw TRYBUNA LUDU in Polish 14 Jun 83 p 4

Text One of the problems arising from the economic reform, one which is causing particularly great controversy, is the attitude toward supra-institutional organizational structures in industry, that is, towards associations of enterprises. Where does the dividing line run between counteracting the monopolistic tendencies resulting from particular industry branch interests and justifiable enterprise initiatives deserving of support which are oriented toward development of mutual cooperation, rational division of labor, lowering of manufacturing costs, and increased coordination of efforts to overcome material, investment, employment and other barriers?

This topic is dealt with in our interview by Dr Antoni Lesniak, Director of the Institute of Organization of the Machinebuilding Industry and a member of the group operating under the Government Agent for Economic Reform, which is drafting an antimonopoly law.

"We are carrying out the reform under conditions of extreme heightening of tensions and difficulties," says Dr Lesniak. "It sometimes appears that it is really beyond our strength and ability to solve the problems which have to be resolved."

"The enterprise managements must not be left alone with the problems, solution of which exceeds the strength and abilities of individual enterprises. The generally higher efficiency of operation of such economic organisms as the Stalowa Wola Combine or the Copper Mining and Metallurgy Combine in Lubin has been noticed by the personnel of the enterprises and gives them something to think about."

Question Does this mean that the enterprises must relinquish the independence which they have so recently gained?

Answer That is not the point. It is obviously necessary to support processes promoting efficiency. I think that this can be accomplished by developing, among other things, the forms of mutual cooperation among enterprises which do not represent a restoration of the old methods of administration but are rather an attempt at working out new partnership relations among them in areas in which cooperation, not "competition" insures that the greatest effects will be achieved.

There has been much talk lately about such things as decapitalizing national property. In view of the currently limited amount of investment resources, decapitalization must come about; there is no avoiding it. But it is becoming necessary even now to begin restructuring the internal proportions of industry. There is only one way to do this: deliberately not regenerating certain production capacities while with the utmost consistency aiding in development and modernization of others as well as their regeneration.

A relatively small part of the development tasks is assumed by the central plan. The enterprises themselves, however, have the bulk of the very limited investment resources available to them. Conditions must be created for transfer of capital among enterprises, a transfer not imposed from without but one arising out of their own initiative and economic interests. For this purpose the enterprises must be able to form appropriate suprainstitutional organizational structures permitting conduct of a common investment policy, as well as appropriate division of profits in cases in which the source of profit is movement of capital among enterprises entering into an agreement.

In the Face of Criticism

Question Some associations practice "transfer of capital" and "transfer of profits" among enterprises (for example, in the form of price adjustment accounts). These practices--let us not conceal the fact that they were inherited from the former associations--have been subjected to harsh criticism. It is charged, first of all, that they blur the picture of the true efficiency of management in individual enterprises and blunt the incentives in enterprises toward efforts for improvement of the main offices of the associations into "domineering" organs, while they should be merely service institutions with respect to the enterprises.

Answer Many more such objections are raised against the enterprise groupings being established in industry. Criticism is leveled, for example, at agreements relating to specialization by individual plants in manufacture of particular product assortments. This is alleged to be a manifestation of a monopoly conspiracy aimed at "division of the market," and so forth. As we know, for the time being there is no "market" and so it is difficult to "divide" it. No one in this case has to "conspire" with anyone else.

The loud outcries against allowing "product assortment agreements" are at present aimed primarily at the small number of weak initiatives which, after all, have the object of resulting in unification and standardization of production, that is, against initiatives without which lowering manufacturing costs, increasing productivity, improving product quality, making service more efficient, international cooperation, and so forth are out of the question.

Question The functions of initiation and organization would be performed in this area by the associations of enterprises?

Answer Yes, that must largely be their role. Obviously not the only one. Omission of the coordination functions has a result similar to that of deprivation of a flow of reliable economic information.

Partners Abroad

Question There are many areas requiring cooperation rather than individual, isolated action. One of the important areas is foreign trade, development of effective exports, and in particular activation of our participation in the processes of socialist integration of the CEMA countries.

Answer There are large economic organizations in the CEMA countries: combines in the GDR, large economic units VHJ in Czechoslovakia, and economic associations in Bulgaria and the USSR. They are our partners and are making increasingly effective use of action of the economic type in the processes of management and provision of incentives for enterprises. These large concerns cannot negotiate with 4,500 "economic entities" in Poland. Finland, a country smaller than Poland, exports more to the USSR than we do. Is it profitable for Finland to form large associations concerning themselves exclusively with trade with the USSR, but not profitable for us?

This applies not merely to trade with the Soviet Union but also to our presence on international markets in general, in the East and West: what kind of "data bank" can an individual medium-sized enterprise, or even one somewhat larger than average, have at its disposal? And in order to make a profit in trade it is necessary to know, for example, the generation of products which a competitor will place on the market 5 years from now. If you do not know this, you are always left behind and taken unawares by others.

In the CEMA commissions decisions are being made even today regarding division of labor, commodity exchange, scientific and technical cooperation, and so forth up to the year 1990. Responsible Polish participation in the work of commissions of this kind is impossible unless the so-called founding organ has ceased to be "authoritarian" and unless the enterprises have formed competent structures of their own capable of assuming the functions of coordination, programming, and discharge of obligations undertaken. The abolition of many bilateral coordinating commissions and the decrease in our activity on the multilateral CEMA commissions is in my opinion a highly unsettling symptom.

Initial Experience

Question In the light of this situation, would the associations differ from the previous associations?

Answer The law on the enterprise states that cooperation between enterprises is to be based on contractual relationships; it creates the possibility of establishing supervisory councils, etc. The associations and other structures of this kind must differ from the previous associations in being established by the enterprises themselves, in operating under their authority and under their control, and in that they can have available to them

only the modicum of "power" which the enterprises forming the particular associations wish to confer upon them.

The law on the state enterprises has clearly stabilized the obligations of enterprises toward customers, suppliers, the budget, creditors, and personnel. An "economic entity" or enterprise has no right to reject these obligations or transfer them to anyone else and thereby free itself of direct responsibility for its performance. None of the 36 associations active within the framework of metallurgy and the machinebuilding industry--we have analyzed the statutes of all of them--has violated this legal principle.

It appears to me that this quite clearly establishes that, regardless of how strong the pressures exerted by the so-called founding organs may have been, the enterprises will now allow, for they cannot allow, transformation of the economic functions of the associations into supervisory ones. The assumption by the association--by authority of the enterprises--of specific economic functions relating in particular to accumulation of funds for development, rational solution of the problems of specialization, cooperation and so forth should, on the contrary, foster increase in efficiency of management and often determines increase in this efficiency.

An alternative for the association could be represented by structures of the combine type, but the main criterion governing their establishment must be the answer to the question of what the extent and necessity of integrated actions of industry are.

Question And what is this extent?

Answer It includes at least the following matters: activities on foreign markets and participation in the processes of international integration in CEMA, cost reduction, creation of new product generations, conservation of materials and energy; optimization of the costs involved in achievement of the desired quality; exploitation of available production capacities; and restructuring of production.

I pointed out that our institute has made a study of the operation of the associations to which enterprises in the field of metallurgy and the machinebuilding industry belong. Of the 36 associations (voluntary and mandatory), 26 have forecasting and coordination of development written into their statutes. Almost all of them have incorporated in their statutes tasks in the area of research and development work and technical preparation of production, and 30 associations are to concern themselves with coordination and cooperation in the sphere of investment and modernization of fixed capital. On the other hand, cooperation in the area of solving product quality problems--something of particularly great importance today--has been acknowledged by only 9 associations to be a topic deserving of attention.

Barely 8 associations have made allowance in their statutes for cooperation in so-called auxiliary economic units (toolmaker's shops, repair services, transportation, etc.), and the scale of the waste caused by the lack of

understanding and cooperation in this enterprise area is downright unbelievable. Only 21 associations give consideration to organization and processing of data, while wages and social problems are quite eagerly "turned over" to the associations. Virtually all the associations have been assigned functions in this field.

In my opinion, these data clearly show that, if the associations are to perform smoothly and efficiently the functions assigned to them in the reformed economy, they must subject their statutes to a process of highly critical verification, and above all examine the agreements regulating the range of the economic functions entrusted by the enterprises to these structures integrating them.

6115
CSO: 2600/1068

JOURNALISTS BRIEFED ON PZPR ROLE IN BOOSTING REFORM

Warsaw ZYCIE WARSZAWY in Polish 13 Jul 83 p 1

[Text] On 12 July at the meeting of the PZPR Central Committee, journalists were informed about the very valuable analysis recently conducted by the Committee on the subject of inspirational work by party organizations during the initiation of economic reform.

As is known, the Ninth PZPR Congress has acknowledged the party's obligation to society to institute economic reform in the shortest period possible. How will this task be implemented? This is the subject of research and analysis conducted during the second quarter of this year by the Central Inspection Committee in cooperation with the PZPR's Central Committee's Economic Division at several ministries and party organizations.

Economic reform is a big change and also an area of political struggle, as stated by Central Review Commission bureau chief Josef Oleksy. This is why the process must be the object of constant attention by the party. However, means of action should differ from those of the past. The deciding factor is the activity of party members working in the economy. Based upon the conducted research, it is anticipated that directions regarding party activity in the economy will be stated. Party activity still is not felt everywhere as a partner in economic administrations, which suffers from a lack of offensive. If reform were to begin to function in full, it would be necessary to break the passivity appearing also among party members and in some of their sectors.

The analysis is exceptionally critical. This criticism also concerns the character and means of reform understood in many party communities. The feeling is born in many party gatherings that reform will resolve automatically our difficulties. Too little attention is paid to fundamental political, economic and psychological conditions. Reform is a change in the method of acting and thinking by party members and society with respect to problems of an economic nature. This is the reason for many misunderstandings and conflicts between the expectations for quick improvement and actual possibilities.

The ideas of reform still have not reached universal consciousness among party members. Important is the issue of means, accuracy of arguments and straightforwardness of language in the process of economic education.

A lot of attention was paid to work with the administrative personnel. Also the work of some party groups with reserve personnel was critically evaluated. Summarizing the Central Committee's general evaluation, it can be stated that the noted earnings and the party's work on systematic changes are not distributed evenly. This also concerns the vertical structure: government, administrative units and party organizations, as well as the horizontal structure of various levels of party activity.

The stated conclusions and opinions certainly will contribute to more efficient party actions in the complicated process of economic reform. These data will be the subject of discussions by the Secretariat and the Politburo of the PZPR Central Committee. In accordance with resolutions by party officials and the authorities, it must be clear that the entire party should become a large lobby for economic reform.

9807

CSO: 2600/1136

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